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THE MOST GENERALLY PREVALENT, THE MOST INADEQUATELY TREATED, CONTROLLABLE CHRONIC DISEASE.*

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I. Introduction

I desire to express my appreciation of the honor the Medical Society has conferred by this invitation to address you. It is a friendly gesture of Virginia where manners are, as they should be, of equal concern with means, to Massachusetts where I am sorry to say, the means often make us forget our manners. I quite realize that the task which the title of this paper sets is a hard one for the proponent of these propositions to satisfy. However, since I am not only assuming the rôle of proponent, but also must admit describing chronic arthritis as the most generally prevalent, the most inadequately treated, and yet controllable chronic disease, I must confess the faith that is in me that these statements are the truth and nothing but the truth. I cannot declare that they are "the whole truth; so help me God," for the whole truth concerning the disease under consideration is, alas, not yet known. With these few words of introduction, we will read our brief, and although I fear that you may find that instead of being a brief, it may prove to be a lengthy discussion, we will try to conduct you by the shortest roads over the dry and unattractive part of the journey to the viewpoint from which we think we have observed that these propositions are facts and not fancies.

II. The Nature of the Malady

To the general concept of the American Committee for the Control of Rheumatism I can very heartily subscribe. The first three paragraphs of this concept may well serve as a text to a brief discussion as to the nature of the malady.

1. The disease chronic arthitis, prevalent in all temperate zones, represents one of the most important, if not the most important, of existing social and industrial handicaps.

2. The Committee conceives of the disease as a generalized disease with joint manifestations. Certain prodromes may be recognized and it is of vital importance that they be recognized.

3. It is the opinion of the Committee that at the present time no single infectious agent or any completely defined dietary deficiency or metabolic disturbance has been conclusively shown to be the sole cause of these disorders. The Committee inclines to the belief that any one of these factors, or certain combinations of these factors, under appropriate circumstances, may basically underlie the onset of the disease.

III. Classsfication

It is important at the outset to define the terms we shall employ throughout this paper to describe the two main types of chronic arthritis. These terms are not entirely satisfactory, but they have at least the merit of simplicity. Under the two headings of atrophic arthritis and hypertrophic arthritis we may easily group the terms which have been used in all the more elaborate classifications which have been proposed. Every careful student of the subject who has had the opportunity to observe the clinical aspects of the disease which Virchow called "arthritis deformans," has discovered that at least two distinct types are easily recognizable. If to clinical macroscopic study the opportunity has been afforded for laboratory microscopic investigation, the differences of types become so much more evident that many students have reached the conclusion that under the general term of arthritis deformans are included not two different types but two different diseases. We occasionally observe both types in the same individual, but rarely if ever coexistent. From the welter of nomenclature have emerged three names as synonymous for each type and these are more commonly employed in English literature than any others. The American atrophic type is in

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British literature usually called rheumatoid arthritis, and in American laboratory studies is synonymous with proliferative arthritis. Our hypertrophic type is identical with the English osteoarthritis and the laboratory degenerative arthritis.

It is necessary, in order to avoid confusion, to mention one more term which is constantly used in literature, namely, infectious arthritis. We have not employed it in our simple working classification, although we recognize that infection may play an important rôle in the causation of chronic arthritis, and sometimes may be such a star performer as to obscure completely the other etiological actors. The reasons which have dictated the omission of this term are the following: (1) Consistency. The terms atrophic and hypertrophic we are proposing are pathologically descriptive and not etiologically descriptive as is the term infectious. (2) Certain observers believe that infection is the basic factor in both types of chronic arthritis and they, therefore, use infectious arthritis in the same sense that Virchow employed the term arthritis deformans. (3) Although gonorrhea, pneumonia, typhoid, dysentery and probably many other less common infections may be etiologic arthritic entities, it will be found that the joint tissue changes initiated by any of these infections may produce eventual pathological pictures so exactly similar that they fall definitely into the atrophic group. Most of us believe that infection is never a basic etiologic factor in hypertrophic arthritis though it may cause the symptoms to be more acute. It must receive consideration, therefore, in both types, but in the present state of our knowledge it seems not only unnecessary but unwise to employ the term infectious arthritis as descriptive of an entity which deserves to be included as a distinct and separate type in the simple plan of classification which we have adopted.

IV. Etiology

There has been and continues to be such difference of opinion concerning the etiology of chronic arthritis that helpful discussion has been sometimes turned into harmful controversy. I shall try to avoid this pitfall which will only delay us on our journey, making only such statements as have been proved to be true and only those suggestions which I believe may be helpful in controlling the disease.

In the majority of arthritic patients a careful history will reveal what may be called background causes, a soil as it were, upon which the arthritic syndrome of both types is planted, germinates most easily, and yields the best (or worst) crop of joint symptoms and signs, which are but the flowers of the generalized disease. The most common background causes may be said to be heredity, age incidence, body build, fatigue of mind or body, circulatory disturbances, faulty alimentation and elimination, and susceptibility to infections. These are factors in both types.

The history will also usually disclose exciting as well as predisposing causes, and in mentioning these it is useful to list them for each type. The most common exciting causes of the atrophic type are infections, either present or past, focal or general; worry or over exertion; exposure to cold or damp. We will remind you again that atrophic arthritis usually manifests itself in the earlier decades of life before forty.

The most common exciting cause of the hypertrophic type is trauma, either sudden and accidental, or repeated and occupational. It is to be remembered that hypertrophic arthritis does not usually demand attention until after the middle decades. We have placed infection last as a possible exciting cause of hypertrophic arthritis, for the evidence of this factor is most inconclusive both in the characteristic joint tissue changes and in response to treatment. The changes of the hypertrophic type are essentially degenerative changes, and in so far as degenerative changes are favored by low grade chronic infections, just so far may infections be properly listed as exciting causes. As we have said, acute infections superimposed upon a preëxisting hypertrophic arthritis often provoke a subacute exacerbation. The theory that the joint symptoms, especially in the atrophic type, are allergic manifestations, is fascinating and seems tenable. It is difficult and often impossible by any known method of culture to grow organisms from the fluid or tissue of joints in which an atrophic arthritis exists. It has been done in humans and experimentally in animals, especially rabbits, and in the future we may find it possible to do it more regularly in human joints, but the joints of rabbits are peculiarly susceptible to infection and the analogy is not perfect. We must remember that joint changes closely simulating chronic arthritis have been

produced in rabbits' joints by the repeated injections of bacterial free autolysates.[1]

There is much to suggest that the localized joint changes in both types are closely associated with disturbances of capillary control and diminished blood supply. These circulatory disturbances may be demonstrated to exist in arthritics in other regions than the joints and fairly typical joint tissue changes have been experimentally produced in animals by cutting off the blood supply to the articular bone. It is conceivable that the difference in age incidence may in part at least explain the difference in the pathological changes in the two types and that underlying them both may be the factor of "inadequate fluid exchange" (Smith) and altered capillary flow. We believe our eyes and ears are still sensitive to the discovery of a specific bacterium which may be called the germ of chronic arthritis. The history of numerous careful searchers for this agent is long and many investigators have attributed specificity to different types of bacteria. The recent careful and important work of Dr. Russell Cecil and his co-workers[2] suggests a special streptococcus as the probable causative agent in the atrophic or rheumatoid type of chronic arthritis. This group of workers have found this streptococcus in the blood and joint fluid of considerable percentages of active cases of atrophic arthritis and the agglutination tests have tended to confirm their belief in the specificity of their organism. Dawson, Olmstead and Boots,[3] in their very complete studies as to the nature and significance of agglutination reactions with streptococcus haemolyticus in rheumatoid (atrophic) arthritis, consider that "the significance of the agglutination reaction in rheumatoid arthritis serum is largely a matter of conjecture." Nor does the agglutination reaction develop until the disease has been established in its classical form for a period of many months. Their attempts to demonstrate the presence of the haemolytic streptococcus in the blood stream and tissues of patients suffering from the disease have been uniformly unsuccessful.[4] So we are still looking and listening for conclusive proof of specific bacterial etiology. There is circumstantial evidence suggesting, as these authors put it, "that infection by hemolytic streptococci may play a rôle of considerable importance in the production of the disease." But in concluding their discussion, they say, "Further investigation is required to establish definitely whether infection by streptococcus hemolyticus plays a rôle in the production of the disease and if so whether this rôle is one of primary or secondary importance."

1. Freiberg, **J. A. Ar. Surg.**, 18:645-670 February, 1929.
2. Cecil, R. L., Nicholls, E. E., and Stainsby, W. J.: **Arch. Int. Med.**, May, 1929, XLIII, p. 571. Cecil, R. L., Nicholls, E. E., and Stainsby, W. J.: **Am. Jour. Med. Sci.**, January, 1931, CLXXXI, p. 12.
3. Dawson, M. H., Olmstead, M., and Boots, R. H.: **Jour. of Immunology**, XXIII, No. 3, September, 1932.
4. Dawson, M. H., Olmstead, M., and Boots, R. H.: **Arch. Int. Med.**, XLIX, February, 1932.

V. Symptoms and Signs

We need say little as to symptoms and signs, for they are common knowledge. In both types discomfort, but rarely acute pain, is felt as a premonitory symptom and more often is described as stiffness. In the atrophic type, a subacute onset is common with swelling, pain and sometimes slight redness and heat. This is especially true in that group of cases in young subjects often called "Still's disease." These swellings perhaps most frequently noticed first in the hands, involve the mid-phalangeal, metacarpophalangeal and wrist joints and in the fingers are spindle-shaped. They are periarticular as well as articular.

In the hypertrophic type, the onset is rarely even subacute, unless an injury has been received, and stiffness is more common than pain. The gradual enlargement of the terminal joints of the fingers frequently present the initial sign often without symptoms. As a rule people pay little attention to these "Heberden's nodes." In the larger joints affected by the atrophic type, the presence of free fluid is more common and almost always one may recognize by palpation the accompanying periarticular tissue involvement and the thickening and proliferation of the synovial membrane which is tender to pressure. In the larger joints affected by hypertrophic arthritis, an excess of synovial fluid is not found, the periarticular tissues are not involved, the synovial membrane is not diffusely thickened, and the tenderness is confined to the chondro-osseous over-growths at the articular margins.

We have referred to a mixed type which is occasionally encountered, but the symptoms and signs of each type run true to form—even when the individual exhibits both types of the disease.

In the discussion of symptoms and signs we desire to emphasize most strongly the importance of the arthritic prodromes. Many patients seeking our advice for other complaints

than joint symptoms may be said to be threatened with arthritis, just as truly and in the same sense that we recognize patients who may be threatened with tuberculosis. If we question them closely, we may often elicit a story of fleeting joint stiffness and pain. Fatigue of body and mind is the most serious threat; improper food fuel, faulty combustion and faulty exhaust are other threats. We should pay more attention to our patients' manner of living and manner of eating. We should examine and keep in condition their body machines and should make sure that faulty body mechanics are not producing unnecessary wear and tear upon joint structures. Such predisposing factors fertilize a soil in which the seeds of arthritis most easily germinate.

VI. Diagnosis

The remarks which have just been made indicate the most important phase of diagnosis, the recognition of the prodromes, and the elimination of their causative factors. This is really "locking the stable's door before the horse escapes into the field of the joints" and often does irreparable damage to essential joint tissues, especially the articular cartilage. The diagnosis of the full blown disease is, alas, too simple. The differentiation of the types may require a little experience, but with this and with the help of Roentgenograms is easily possible.

VII. Treatment

If treatment is to be successful in any but the very early and mild types, the first essential seems to us to be the patient's history. Nothing less than a leisurely, searching and kindly cross examination is likely to discover the background causes which, in our opinion, enable us to plot a curve of successful treatment. Heredity, psychology, home and occupational life, past infections, and many other factors help us to draw this curve. The second essential in planning treatment is the general examination, not the examination of the incidental joints, and covers, of course, the heart and lungs, the blood and urine, the foci of infection, as also the body type and the body mechanics; the quality intake of food and repeated examinations of the quality outgo, often necessitating a gastro-intestinal Roentgenological series of films; basal metabolism tests and perhaps only guesses at other endocrine deficiencies—an analysis so searching that weeks rather than hours are often required before the curve of rational treatment begins to be defined. A hospital rather than a home is the habitat of choice for such an analysis. In a well advanced case we must be ever on the alert to prevent and correct deformity and maintain the correct curves of the spine, the proper weight-bearing lines of the lower extremities and the optimum positions for functional use of the upper extremities. Orthopaedic appliances are often of great assistance in this prevention. We must search for foci of infection and, finding them, must strive not only to evaluate their etiologic significance but to determine when and how and even *whether* the patient will be likely to be benefited by their removal. Physical therapy, exercise and exercises, heat, massage, hydrotherapy, splints and apparatus play a tremendously important part in relieving the joint symptoms. Diet arranged for the individual patient as indicated by the analysis of his intake and outgo we have come to feel is essential, and sometimes the only essential, when normal utilization of the intake and normal elimination of the waste products can be brought about. Studies of the stools of large groups of patients with chronic arthritis will yield evidence of starch indigestion and imperfect utilization of carbohydrates in as high a percentage as 60 per cent.[5] Fermentation is more common than putrefaction, but each case must be considered individually. The vitamines should be high and we must constantly seek for any real dietary deficiencies. Fletcher[6] has shown how important a factor in chronic arthritis a vitamin B deficiency may be and how satisfactory a response occurs when this deficiency is met.

From the extensive materia medica employed for the relief of chronic arthritis we might infer that the choice of drugs would be difficult, but we believe this is not the case. There is no specific drug, certainly not salicylic acid in its various forms, useful as many of these preparations are, for the relief of pain. We remove it more often than we administer it. The indications for iron are clear if the haemoglobin is low. Circulatory stimulants which open up temporarily at least the capillary beds have their place. The arsenicals, be-

5. Hall, F. C., and Monroe, R. T.: **Arch. Int. Med.**, 47, No. 5, p. 762, May, 1931.
6. Fletcher, A. A.: **Jour. Lab. and Clin. Med.**, XV, p. 1140, August, 1930.

cause of their tonic and alterative effects, may often be most advantageously administered. The literature leaves little doubt as to the benefit to be derived from thyroid substance or extract when the metabolism is consistently low. The value of vaccine therapy is a vexed question. We believe it has a place, but perhaps a smaller place than the current literature would suggest. I have gained the impression that as observation becomes more observant and research becomes more searching, the dependence upon complement fixation tests and upon estimations of the sedimentation rates becomes less when by these methods an attempt is made to determine the type and etiologic importance of the infectious element or elements. I am not skilled in the use of vaccines and I am unable to offer a reliable estimate of their value. I say with hesitation that I have come to look upon vaccine therapy as an experiment and I am not certain that the happy *post hocs* which I have observed are always *propter hocs*.

Today, unfortunately, we must list reconstruction surgery as a method of treatment having wide application. Its applicability is limited to that large class of chronic arthritic patients the fires of whose disease have been quenched by nature or by art, but who are left with disabling deformities. A further selection of these cases must be made before the aid of surgery can be helpfully invoked. These patients' general condition must justify the operative risk, their morale must be maintained while one joint after another is attacked. But the reward of gratitude to the surgeon is great, and to the patient the social and physical betterment obtainable by meticulous carefully planned surgery, followed through until the objectives have been attained, means nothing less than a new lease of life in which liberty and the pursuit of happiness again become possible.

As a final method of treatment, I plead for a most relentless "follow up" of patients. The disease has its remissions and exacerbations without treatment, and patients with chronic arthritis whom we treat deserve as careful and as sustained an interest and as repeated "check ups" by their medical advisers as do our patients with diabetes, cancer, tuberculosis and heart disease.

I have reached the viewpoint to which I promised to conduct you since you have had the temerity as well as the kindness to ask me to serve you this evening as a courier. I quite realize that many of the audience might have been better couriers and might have led you to other viewpoints. However, from almost any point of vantage it is possible to visualize chronic arthritis as the most prevalent chronic disease and the most economically and humanely important.

I think I am correct in stating that Massachusetts is the only State whose Department of Public Health has carefully studied the incidence of chronic disease among its living citizens. This house-to-house survey was made in two sections of the State each of which included considerable urban and rural communities. Smaller units of population were similarly studied throughout the rest of the State and served as "check ups" of the findings in the larger areas. The findings for the large and the small areas were essentially the same. They may be epitomized as follows: The four most prevalent chronic diseases in Massachusetts are cancer, tuberculosis, heart disease and chronic rheumatism. The State has a population of about four and one-half millions. There are approximately 10,000 cases of cancer; there are approximately 25,000 cases of tuberculosis; there are approximately 85,000 cases of heart disease; there are approximately 140,000 cases of chronic rheumatism, or more cases of chronic rheumatism than the sum total of all the other three most prevalent chronic diseases.

I have little doubt that similarly conducted studies in other densely populated Northern States would yield equally alarming figures. Europe has taken cognizance of this prevalence, and Sweden has had for many years special State hospitals for chronic arthritis. The disease exists in all Temperate Zones from South Africa to Nova Scotia. A League for the Control of Rheumatic Diseases has been formed in Europe and includes committees from almost all the European nations. The American Committee for the Control of Rheumatism is a member of this league.

The economic importance of the disease may be realized from some recently compiled British figures. In the year 1927, it has been estimated that under the National Health Insurance scheme, in the British Isles alone, including the loss of wages but *not* including the cost of nursing or institutional care, the disbursements on account of rheumatism were ap-

proximately 80 millions of dollars. In terms of cost to industry, this represents an annual loss of twenty-five million working days.

I hardly need to stress the humane importance of the disease. Most of you have seen the blight of rheumatism on your own family trees. All of you have met it among your patients. They rarely die from it, but I am sure some of you feel that they rarely get well. The life of an arthritic derelict, even if the fires of his disease have burnt themselves out, is a life not of labor but of sorrow, of complete disability and of complete dependence. Such facts as we have, therefore, indicate that in our country arthritis is the most prevalent of chronic diseases and probably the most economically and humanely important chronic disease.

It may be a hard and certainly it is a less pleasant duty to try to convince you that chronic arthritis is the most inadequately treated of chronic diseases. I speak from the point of view of a doctor of derelicts. Orthopaedic surgeons should never have the opportunity of treating patients suffering from arthritis. They belong to medical men and not to surgeons. Personal experiences leave strong impresses, and with what may seem malice aforethought but with what is meant for kindness, I state my impressions that the great majority of well advanced cases of arthritis that seek orthopaedic consultation have in the past received inadequate treatment at the hands of their medical advisers. At the Mayo Clinic the histories of the cases that finally sought the advice of the clinic's physicians showed that 75 per cent had either given up hope in their family physicians' ability to help them or had been under the care of cultists. The Massachusetts survey showed that 33 per cent of the persons suffering from chronic rheumatism had lost confidence in medical treatment. In Canada we are witnessing an amazing confirmation of our impression. In a little town not far from Ottawa a country physician who twists feet is being visited, literally by hundreds of patients at a dollar a head every day and among them I am informed is a great company of chronic arthritics. The doctor makes no claim of cure, but thousands of dollars are spent on the chance. The fad will undoubtedly die, for "Truth is great and shall prevail," but as a piece of evidence of the lack of faith in regular medicine it is disturbing. The saddest part of the story is that the sufferers with chronic arthritis are faring no better with faddists, cultists and patent rheumatism cures than with regular practitioners, probably not nearly as well, and both the patient and the doctor are poorer for the attempt.

If I shall succeed in pointing out facts which suggest that the disease, chronic arthritis, is comparatively easy to control, then this enormous load of disability is all the evidence we need to indicate that the disease is being inadequately treated, for it is certainly not being adequately controlled.

Perhaps you will need a little imagination or even a pair of rose colored spectacles to see the vision of control which some of us think we can discern and which has caused me to refer to the disease as a controllable chronic disease. Again, personal experiences have opened the eyes of many physicians dealing with this disease to the "vision splendid." With the occasional, early seen, frankly infectious case which permanently recovers from his acute or subacute or chronic arthritis when the infection is rendered no longer active you are all familiar. Perhaps, unless one is able to follow his cases for years, you do not see as many cases as we derelict surgeons see, who tell the story that after the tonsils were removed they were free from joint symptoms for several months or years; then the arthritis returned, and several abscessed teeth were extracted, and in many instances relief of varying periods was again experienced. So with drainage of the sinuses and removal of the gall-bladder, until, when they seek the surgeon's help, there is nothing else to remove (except the arthritis) and only patchwork surgery is to be done if and when the generalized disease can be rendered inactive.

As time has gone on, orthopaedic surgeons have begun to see early cases of chronic arthritis, due perhaps to reports of help rendered by their patchwork surgical efforts. The crying pity of the disabled cases has stimulated these surgeons, as well as many internists interested in the disease, to consider the soil upon which the infection was planted and to debate the question as to whether these infectious might not arise because this soil favored their growth, and might not be looked upon as the result of a basic generalized disease as well as a causative factor of joint symptoms. Changing the soil before or after an overload of in-

fection has been removed has seemed often not only to relieve joint symptoms permanently as well as temporarily, but also to prevent recurrence of focalizing infections in other localities. The experiences of individuals with their private patients or even with the occasional chronic arthritic patients, who are reluctantly admitted into general hospitals, furnish only impressions and yield no convincing figures as to the possibility of control. Nevertheless, other recent reviews of large numbers of end results seem to furnish the encouraging data we are seeking. For many years an arthritic out-patient clinic has been conducted at the Peter Bent Brigham Hospital by Dr. Francis C. Hall[7] and Dr. Robert T. Monroe. Their end result studies of 89 patients showed that between 65 and 75 per cent of these chronic cases who were not sufficiently disabled as to prevent their visiting an out-patient clinic recovered from their generalized disease and experienced a subsidence of their joint symptoms. Very few of these cases received any vaccine therapy and emphasis was placed on changing the soil, although removal of obvious foci of infection was carried out whenever it was practical.

The Swedish National Hospitals for Arthritis furnish still more convincing figures. The majority of patients entering these hospitals under the pension or insurance system are the moderately severe cases who are prevented from earning their livelihood because of chronic arthritis. Professor Kalmeter has collected the end results of this hospital treatment three years after the patients have left the hospitals. The approximate figures show that 60 per cent of the patients, three years after their discharge, have returned to their old methods of support and are still working, that 18 per cent more no longer require pension, and that only about 22 per cent fall into the disabled class.

Still more encouraging statistics have been published from the London Red Cross Rheumatic Center. The "experience of the first two years shows that in spite of the large number of advanced cases accepted, 70 per cent of the men and 80 per cent of the women had improved sufficiently after treatment to follow their usual occupation."[8]

I do not believe (though I admit I have not seen comparative reviews) that with any of the other three chronic diseases which the Massachusetts survey shows make up the bulk of existing chronic diseases in that state, can such high percentages of recovery or arrest be attained; certainly not with cancer, almost certainly not with chronic heart disease, and probably not with chronic tuberculosis.

I have presented my lengthy brief and you as jury must decide whether or not I have presented evidence which suggests that the titular propositions of the paper are true.

Before leaving this imaginary vantage ground to which you have allowed me to conduct you, I should like to point out a great need which I believe we can see. It stands in the way of control. If we can remove it, I believe the control of the disease will become apparent. When under state or private auspices facilities can be afforded the general practitioner for more careful analysis, more accurate diagnosis, and more appropriate temporary immediate treatment of his arthritic cases, then the curve of rational and successful treatment may be plotted. These facilities in my opinon most general practitioners now lack. Then the patient may be returned to his family physician who with the data thus furnished becomes by all odds the best captain of the patient's fate. Such a plan we believe leads us away from state medicine and toward the conservation of private practice and toward the preservation of the all-important personal relation between the patient and his physician.

If such facilities can be afforded, there is justification for an attitude of strong optimism among physicians dealing with chronic arthritis toward the complete recovery of early cases and toward the control of more advanced cases. We orthopaedic surgeons may then look forward with hope to the day when the arthritic derelict will disappear from our consulting rooms and our hospital wards, leaving us poorer in purse but richer in spirit because this will mean that a more timely and, therefore, a greater service is being rendered by that great bulwark of the medical profession, the family physician.

372 *Marlborough Street.*

7. Hall, F. C.: **N. E. Jour. Med.**, Vol. 200, No. 8, pp. 369-374, February 21, 1929.
8. Neligan, A. R.: **Jour. State Med.**, London, May, 1932.

Friendship is the holiest of gifts;
God can bestow nothing more sacred upon us!
It enhances every joy, mitigates every pain.
Every one can have a friend,
Who himself knows how to be a friend.

—*Tiedge.*

THE UTILITY AND DANGERS OF THE OBSTETRIC FORCEPS.*

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The process of delivery is essentially mechanical. Perceptions born of experience, which alone may successfully weigh and value the many imponderable factors involved in the mechanical problems of each particular labor, constitute the art of obstetrics. This art is valid only in so far as it is firmly based on an understanding of the mechanics of the process.

The progress of the fetus through the parturient canal is a resultant, depending on the preponderance of expulsive over resistant forces. The normal expulsive forces are the muscular contractions of the uterus, the diaphragm and the muscles of the abdominal parietes. The principal resistance resides in the relative size of the fetus and that of the passage which it must traverse, that is, the bony pelvis with its padding of muscle, fat and connective tissue. This relation usually presents such a disparity as to require a considerable exhibition of the expulsive forces to overcome it; it is so overcome by molding or shaping the fetus to a closer correspondence of size with that of the parturient passage.

It should be appreciated that when original disparity between the fetus and the passage is great, the entire expulsive force may be, for a time, "absorbed" in producing molding. As it is hard to measure the progress of molding, the lack of much *descent* of the presenting part during this period may lead to the unwarrantable assumption of arrest. In these circumstances, only after the lapse of sufficient time without attaining enough molding to permit descent to begin, may the conclusion be reached that natural forces are inadequate to overcome the disproportion.

The second resistive force is the elastic resistance of the cervix and the lower segment of the uterus. The third resistant force is the more or less elastic resistance of the fasciae and muscles of the pelvic floor.

The necessary preponderance of the expulsive forces over the resistances is affected by many circumstances which reduce the effectiveness of the expulsive forces on the one hand or increase the resistances opposing them, on the other. It is hardly necessary to enumerate all of the influences affecting this relationship of forces, but when they so operate that at any stage of the expulsion the resistances become great enough to balance the expulsive forces, the resultant will be zero and progress will be arrested.

In such a situation, artificial aid must be invoked to complete the progress which is essential to the birth of a living fetus. Augmentation of the expulsive forces by pressure from above or by stimulation of the tissue in which those forces reside is of very limited applicability and attended by very certain dangers, alike to the mother and her baby.

Reduction of the resistance by surgical division of the structures constituting it, is of decided value, but necessarily limited in scope, inasmuch as only under the gravest surgical necessity may it be extended to the most resistant of all such structures, namely, the bony pelvis itself.

Therefore, traction to augment the expulsive powers constitutes the most frequent and useful method of artificially re-establishing a preponderance of expulsive force over resistance. Inasmuch as the head of the fetus presents first in the vast majority of labors, some tractive device which may be applied to the head is the readiest means of utilizing traction. The only efficient device which may be so applied is the obstetric forceps. This instrument therefore meets most frequently the need for an artificial means of terminating labor. To be employed properly it must not only succeed in doing this, but it must do so without jeopardy to the life of the child and without irreparable damage to the soft parts of the mother.

The instrument's principal function is traction. Also, inasmuch as improper rotation of the head results in an increase in the resistance to expulsion, and as under certain circumstances such failure to rotate may be overcome by means of the forceps, the latter has a distinct and important function as a rotator. But, while it is true that its efficiency as a tractor depends to some extent on leverage, the deliberate use of the instrument as a lever is improper.

As a tractor it is of value in many conditions involving actual or relative insufficiency of the expulsive powers in overcoming the resistance. Such conditions may depend on actual inadequacy of the muscular contractions *per se*, but most frequently they arise from relative disproportion between the size of the

*Read by invitation before the Richmond (Va.) Academy of Medicine, September 27, 1932.

baby and the passage through which it must pass, that is, actual disparity between the measurements of the fetus in its minimal diameters and of the passage through the bony pelvis in its maximum diameters.

Less directly, disturbed relations of presentation, posture and position of the fetus by increasing the minimal diameters thereof, operate to produce the same disproportion of relation in measurement. Here the function of the forceps as a rotator is of frequent value.

Other circumstances in which traction, by augmenting expulsive forces, operates to attain a successful issue are those of unnatural rigidity of the cervix or of the pelvic floor.

Not infrequently conditions entirely outside the parturient tract indicate the employment of traction, not primarily to insure eventual successful outcome in relation to the forces involved, but to produce a more rapid termination of labor in reference to the extraneous condition. Among the more frequent of such conditions are abruption of the placenta, placenta previa, eclampsia, and heart decompensation.

Having thus outlined the wide usefulness of the forceps, it is necessary to recognize the dangers attending its employment.

The operation of the natural forces of labor endangers the integrity of both maternal and fetal structures. The preponderance of the expulsive forces over the resistances very generally means that the structures constituting the resistances are damaged by the operation of the former forces. It is probable that in no case of parturition does the cervix maintain entire anatomical integrity. It is equally certain that in few cases do the pelvic floor and the structures supporting the anterior vaginal wall and bladder escape damage, even though of such occult nature as to elude immediate detection. The danger of all such damage is directly and inevitably increased by the introduction within these structures of unyielding steel instruments, which always occupy measurable space and frequently present sharp edges which may cut the soft tissues of the mother. Therefore, the use of forceps necessarily increases the danger of damage to the cervix, to the pelvic floor and to the vagina. Besides, if inconsiderately used, the force which is exerted through them may fracture the fragile coccyx and strain the pelvic joints; the edges may lacerate the bladder, the urethra, the rectum and the periosteum of the pelvic bones.

Even in the natural operation of the normal forces of labor the baby is between the upper millstone of the expulsive, and the lower millstone of the resistant forces. Every pound of pressure exerted by these forces has to be resisted in equivalent degree by the delicate fetal structures, the most susceptible to injury of which are the intra-cranial contents, the brain, its vital centers, and its blood supply. Even under the most nearly normal conditions, the effect of labor pressure not rarely causes fetal death, in spite of the fact that the normal forces so operate as to most evenly distribute this pressure and thus minimize its danger.

When the head is directly seized by an artificial means of applying force, the pressure thereof is determined by the sometimes uncontrolled power of the operator's hands, arms and shoulders; this pressure is multiplied to an extent which is hard to estimate by the leverage of the instrument; and the blades are so applied to the head as to most unevenly distribute the pressure. Therefore, the probability of fetal injury is tremendously increased by the use of forceps as compared to the operation of natural forces alone. Such injury may comprise laceration of the scalp, ears and neck; crushing of the calvarium, of the bones of the face, of the orbit, of the eyeballs, of the cervical nerve roots; bursting or laceration of the blood vessels within the skull, particularly the fragile-walled sinuses; and compression of the brain directly or by extravasated blood.

To avoid these dangers of maternal and fetal injury and their many sequelae, which are of all too frequent occurrence, the use of forceps must be most carefully restricted with relation to the condition of the fetal and maternal parts at the time of their employment.

To the mother, the most directly and indirectly dangerous injuries are those involving the cervix, because they frequently cause massive hemorrhage and offer most facile portals of infection. Therefore, the forceps must not be employed unless the cervix is fully dilated and retracted; dilated not so many centimeters or so many finger breadths, but so dilated and retracted that the fingers in the vagina cannot feel any portion of the cervix around the head.

They must not be applied until the membranes have ruptured, lest direct traction on

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the membranes may dislocate the placenta. They must not be applied if the vagina is obstructed by atresic narrowing or tumors; or in the presence of tremendous varicosities involving the vagina or labia, lest the resulting lacerations cause uncontrollable hemorrhage and extensive tissue necrosis.

In regard to the fetus, the forceps must not be used until there is at least such a degree of molding that the plane of the maximum diameter of the fetal head corresponds, or almost corresponds, with the plane of the pelvic inlet. If this rule be ignored, the amount of artificial force necessary to secure complete molding is frequently destructive of life, or may result in sequelae attributable to cerebral injury.

The forceps must not be employed as tractors in mal-presentation or mal-position of the fetal head until every effort has been made to correct such conditions either by the use of the forceps as rotators, or by other means.

Therefore, to insure against such misuse of the forceps, a positive diagnosis of presentation and position must be arrived at before they are applied. Careful vaginal exploration is necessary to do this. The introduction of one or two exploring fingers is rarely sufficient. The whole hand must be introduced into the vagina, if necessary under anesthesia. Both fontanelles, and as large a number of other landmarks as possible, such as the sagittal suture, the supra-orbital ridges, the ears, the nuchal ridge, the features of the face, and the line of the mandible, must be successively recognized and their relation determined. Special time and effort devoted to such careful diagnosis will well repay itself in increased success and safety of operative manipulation.

Forceps must not, except under conditions of great urgency or difficulty, be applied in any other manner than to the bi-parietal and bi-malar aspects of the skull, as other applications are much more dangerous from the standpoint of cerebral, vascular, and nerve root injury.

Traction should never be hurried except in life threatening emergency. The force employed should be moderate, smooth, and deliberate; never jerky; imitating nature in being intermittent, with actually timed intervals between tractive efforts.

Of course these rules for the application of forceps are frequently violated, and healthy, living babies are delivered and mothers recover in spite of such violation, but too many mothers are seriously or even mortally injured, and too many babies are killed or crippled by lack of observation of them to permit them to be disregarded with impunity.

It may be asked what is to be done with difficult cases in which the indicated conditions for the application of forceps do not exist. What is to be done for the cases in which the head does not enter the pelvis or where it becomes arrested before it has completely accommodated itself to the inlet? So far as possible, endeavor should be made to anticipate by competent estimation whether the head will be incapable of entering the inlet; failing this, we should endeavor to decide by the result of a test of labor, not too protracted, whether the head does actually come through. In this connection, it is to be noted that the apex of a head elongated by molding may be well down in the pelvis, giving a false impression of complete engagement, when the plane of the maximum diameter is really well above the plane of the bony inlet. Failure to recognize this possibility is a frequent cause of costly error.

If it is originally estimated as certain that the head cannot possibly engage (a conclusion only rarely justified) or if the result of labor test demonstrates that it does not do so. three courses are open:—

First: Resort to elective Caesarean section. Decision as to this measure must be qualified by recognition of the very definite contra-indications to Caesarean section. If such contra-indications exist, Caesarean section is not the choice of election, except when conditions and the competence of the operator permit selection of one of the established technics of extra-peritoneal Caesarean section, or when, very rarely, extirpation of the uterus, at the time of the section, may be entertained as necessary or desirable.

It may be said that some physicians practice many years without having an occasion to resort to Caesarean section, or that a competent obstetrician may seldom or never encounter a case which is impossible of delivery by vagina. But universal insistence on vaginal delivery would certainly cause regrettable results in maternal invalidism or fetal death or injury. There is seldom need to regret resort to judiciously chosen Caesarean section, and frequent occasion to regret failure to employ it.

Second: There is undoubtedly an ill-defined

group of cases in which podalic version and manual extraction affords an easier and safer way out of difficulty than does forceps extraction. It is hard to define the exact content or the exact characteristics of this group, and this expedient is always somewhat of a gamble, because, if having accomplished the version, the after-coming head impacts, the infant suffers a greater jeopardy than before. The use of forceps for extracting the after-coming head is less traumatising than, and therefore preferable to, excessive traction on the neck and shoulders or excessive pressure on the head from above the inlet.

Third: There is the patient biding of time, without regard to fetal survival. All effort should meantime be made to support the strength of the mother, by the use of opiates and the administration of nourishment. The advantage of the time factor may be utilized to the point at which molding shall have occurred sufficient to permit extraction by the vagina in conformity with proper conditions for the use of forceps. Bear in mind that this may connote the loss of the baby, but this is sometimes preferable to incurring too grave a risk for the mother. If fetal death shall certainly have occurred during such a program of expectancy, there should be no hesitation in diminishing maternal trauma by resort to craniotomy.

How shall those cases in which the cervix fails to fully dilate and retract be handled? Given good molding and progressive descent of the head, the cervix (in the absence of scar tissue or neoplasm) is not often a cause of dystocia. When the cervix apparently refuses to stretch and retract over the head, it is generally because the head is arrested in the bony inlet. The vast majority of problems apparently referable to the cervix are really referable to bony impaction.

But occasionally the operator finds himself confronted with the necessity for delivery, all other conditions for forceps being satisfied except the retraction of the cervix. In such case the anterior vaginal fornix should be incised, the bladder separated from the cervix and lower uterine segment, and the latter structures incised anteriorly in the median line. A posterior median incision may also be carried through the cervix. It is practically never necessary to extend this above the posterior vaginal fornix.

Unyieldingly rigid perineum or unusually small vaginal introitus may increase the difficulty of forceps extraction so far as to augment danger to the fetus. The surgical division of the perineum under these conditions is much preferable to the risk of extensive and irregular tears. Such procedure not only permits better restoration of the pelvic floor, but by relieving the counter-pressure against the anterior vaginal wall and the fascial support of the bladder, diminishes the risk of injury to these structures.

From the foregoing, it is evident that the use of forceps is never an alternative procedure. The question should not be, "Under given conditions, shall forceps extraction or this or that other method be used?", but, "The indications for what procedure do the conditions present most nearly correspond to?" Every method has its own particular field of usefulness, within which it is safe and successful, and beyond which its application is improper, futile or dangerous. To define these several fields requires accurate estimation of each individual case.

But many cases are difficult to estimate, and so there should be more recognition of, and reliance upon, the specialist obstetrician in evaluating them. Patients who suffer from abnormal obstetric conditions are just as much entitled, from the standpoint of humanity and sound practice, to consultation with acknowledged experts as are those who suffer from pathology of the thyroid, the lungs, the gall-bladder, or the appendix.

To summarize, the obstetric forceps constitutes the most useful single expedient at our command for overcoming dystocia dependent upon mechanical conditions and for expediting the termination of labor under certain circumstances not so dependent. Its use, however, is attended by definite dangers, both to the mother and to the fetus. To avoid these dangers, its use must be restricted to cases where conditions exist which will reduce them to a minimum. Its use under other conditions, while occasionally successful, is improper, and attended with not infrequent catastrophe. Lacking proper conditions for its use, other means of delivery should be employed. The skill and knowledge of the specialist obstetrician should be as regularly and freely available to patients undergoing abnormal labor as are the services of the specialist cardiologist, internist, and surgeon to patients respectively requiring them.

254 *Union Street.*

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THE MANAGEMENT OF CHRONIC CATARRHAL OTITIS MEDIA.*

JOHN F. CULP, M. D., Harrisburgh, Penn.

A good terse definition of hearing is that given by Hays: "Sound is an appreciable noise that is transmitted to the brain. Hearing is an interpretation of that sound."

The word management, according to the dictionary, means skill in directing. It is a more comprehensive term when applied to medicine than the word treatment. There is probably no chronic disease in which skill in management is more essential than chronic progressive deafness. Patients coming to us for relief from chronic deafness may be roughly divided into three classes: Those who have had treatment from one or more physicians, much of this being over treatment; they are nervous, disheartened and discouraged, but still have the desire for better hearing for "Hope springs eternal in the human breast." Another class includes those who come to us for the first time; they have noticed for some months or for some years that they have not been hearing so well, and have treated the matter rather lightly. Suddenly they are shocked to find their hearing is either very much worse or else the noises have started in the head. They have been deluding themselves all this time that the trouble was of a minor nature that could easily be corrected by a little treatment and are more than surprised to learn that things are very much worse than they had expected them to be. There is still another class, less numerous, who are nervous and apprehensive, that have had one or more relatives who have been deaf, and while they themselves still have good hearing they are tormented by the thought that the influence of heredity will cause them to become deaf. In most of these cases their fears are groundless.

When a patient consults us for the first time complaining of bad hearing, it is well to get a short history beginning from early childhood, and unless we can give them the necessary time, at least a half hour or more, for an examination, a subsequent appointment should be made. Much depends on this first interview and examination. An indifferent manner or an air of superficiality will probably convey to the patient a lack of interest, which will handicap the physician from the start. Unless we can impress our patients with our sympathy and understanding of their troubles and can also impress them with a reasonable hope of making them better, the battle is half lost before it has begun. There is no disease where constant optimism is more necessary to get even moderately good results.

Most of our patients of middle age or older frequently get great comfort when it is explained to them that as we get along in life our hearing as well as our eyesight and other special senses becomes less acute. The history is especially important. The family history pertaining to deafness, previous disease and general condition of the health; the onset of the deafness, previous symptoms, habits as to diet, exercise, constipation, etc., should all be carefully noted. Many of our patients will give a frequent history of earache in childhood. Some of them trace the beginning of their bad hearing early in life to such diseases as measles, scarlet fever, and the like. Many will tell you of frequent head colds, others of frequent attacks of sore throat and tonsillitis.

Examination of the upper respiratory tract should be thorough.

The presence of obstruction to nasal breathing should be noted.

Chronic sinusitis, naso-pharyngitis and diseased tonsils should be looked for.

A high arched palate with protruding upper jaw and irregularities of the teeth means impairment of nasal breathing and can usually be traced to neglected adenoids during childhood.

The use of the Holmes' pharyngoscope is with me a routine practice. Generally we learn nothing that could not be discovered by a good anterior and posterior rhinoscopy. Often, however, a diagnosis of unsuspected chronic sinusitis of the posterior ethmoid and sphenoid sinuses can be diagnosed with this instrument. On several occasions adhesions between the posterior part of the tubal cushion and the pharyngeal wall have been discovered. These when broken up will measurably help the hearing. A perfectly straight nasal septum is seldom seen. Even with patients with a moderately deviated septum the breathing space is generally sufficient for all practical purposes. To operate on these patients would be useless surgery. Unless the amount of inspired air is insufficient to ventilate the nasopharynx or unless the crooked nasal septum

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interferes with natural drainage of the accessory sinuses, operation is not necessary.

Glandular hypertrophies in the fossa of Rosenmüller can sometimes be detected. These are usually the atrophic remains of adenoid tissue. Hypertrophy of the turbinates, generally the lower, are sometimes seen. This condition should, of course, be corrected but operation for this is not generally necessary unless polypoid degeneration of the posterior tip of the lower turbinate is observed. These posterior tips should be removed when they are large enough to interfere with nasal ventilation or when they are soft enough to come in contact with the lateral pharyngeal wall.

Many patients will tell you that their deafness began with an attack of influenza and that subsequently after each cold their hearing gradually became less and less. When you get a history of repeated head colds hyperplastic sinsuitis should always be suspected. Here again the Holmes' naso-pharyngoscope has proven a valuable instrument in making proper diagnosis, and is generally of more value to me than an X-ray examination.

The exact condition of the tissues of the tubal orifice can also be made out by the use of the pharyngoscope.

We now come to the question of hypertrophied adenoids and diseased tonsils as a causative factor of chronic progressive deafness. We have all seen many cases where negligence in early life has led to a degree of deafness in later life. The theory has long been held and is still taught in all our textbooks that tonsils and adenoids set up a chronic catarrhal infection of the tissues that have to do with the proper conduction of sound to the perceptive apparatus.

This disease has been called chronic catarrhal otitis media in contra-distinction to disease of the receiving apparatus or end organ. The supposition is that if the sound waves can be properly transmitted to the cochlea, the hearing can be brought to an approximately normal state.

How many of us have repeatedly seen patients who have apparently normal eardrums and normal tubes and no evidences of pathology and in whom no marked disturbance of the conductive apparatus can be demonstrated and yet have a decided deafness. Treatment of chronic progressive deafness following along the lines of this theory, has not, we must admit, been brilliant up to this time.

Dr. Francis P. Emerson, who has written several illuminating articles on this subject, in speaking of the failure of the otologist to improve or cure more patients with chronic progressive deafness, says:

1. "Has not this failure been largely due to the fact that we have been trying to explain nerve dysfunction in terms of physical obstruction. Sound tones may fail completely or partially to reach the perception center, but obstruction never causes nerve derangement unless pressure, irritation or long continued excessive sound tones co-exist as additional factors. Neither does the relief of obstruction in any way effect the etiology of an intermittently progressive disease as that which characterizes a gradual loss in tone perception which otologists have to treat. One of the early errors that was misleading in our understanding of the pathology of the middle ear was due to misconception of the nature of the catarrhal process in that it was generally thought to be non-bacterial in origin. It would seem to be obvious that any excess secretion from a mucous membrane must be due to an irritation from either a mechanical, chemical or bacterial source. A mechanical cause could be easily eliminated; any chemical change that was constantly present in the secretions was never demonstrated, hence, the inference must be that it was due to bacteria. Science has strengthened the contention that slowly progressing deafness is a disease involving the perception apparatus."

2. Emerson further believes that in practically every case of progressive deafness there are one or more chronically diseased and unopened follicles of the tonsil and that we will invariably find a tender gland at the angle of the jaw on the side of the involved ear. This he calls the sentinel gland of Cohnheim.

Some years ago Dr. Lee Wallace Dean and Dr. C. C. Bunch, working in the laboratory of the University of Iowa, found from the studies of a goodly number of patients of so-called hyperplastic otitis media that all with one exception showed evidences of a lesion of the nerve or end organ, and that there was no constant relation between the extent of the lesion of the middle ear and the lesion of nerve or end organ and for this reason have come to the conclusion that disease of the end organ and acoustic nerve are much more common than a lesion of the optic nerve.

My colleague, Dr. George F. Gracey, of Har-

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risburgh, Penn., some years ago in an article read before the Pennsylvania State Medical Society, claims that the results of these and other observations definitely confirm what was before only an assumption that the acoustic nerve is often the seat of a neuritis from infected lymph adenoid tissue, the toxic products being elaborated by bacteria and carried by the blood or more often by the lymph stream. He speaks of the effect of the tonsillar or dental toxines on the vestibular nerve and refers to the cures made by clearing up these sources of infection. To further reinforce this theory, he cites the fact that "In the developmental scale the cochlear nerve is much younger than the vestibular, and therefore should be more sensitive to the effects of degenerative processes."

We now come to treatment. The first thing to do is to correct any disease in the nose, naso-pharynx or throat. Before any operation is attempted, one should be sure that he has the absolute confidence of the patient so as to obtain the necessary cooperation. There is no disease in the treatment of which confidence is more essential. Some patients readily assent from the beginning to any treatment outlined, and in others it may be necessary to temporize with treatments which we know may not have immediate effect. In the meantime, however, both patient and doctor are getting better acquainted and that confidence in the physician is being acquired which is all so necessary for the patient's good.

Except in the more hopeless cases it is well to give a moderately hopeful prognosis. These people come to us for relief and it seems to me that it is cruel to turn them away without even one ray of hope. Sometimes we will see in some of these patients a change in their mental attitude toward life even after only a very few treatments. Then they take more interest in things and become more wide-awake. If we can secure their confidence at the start, its maintenance is made much easier and the want of good hearing will not be either so noticeable or so troublesome.

The patient with one deaf ear and who hears well with the other is often a problem, and you often have heard them say, "I have one good ear; why bother with the other?" It is our duty to make it plain in these cases that the causative factors which have made one ear deaf may produce the same condition of pathology in what is now the good ear. It is well to see this type of patient twice a year for a check-up on the hearing.

Frequently we see a patient who, because of deafness in one ear, is very apprehensive about the other, or good ear. A good many years ago a lady forty-five years of age consulted me about such a condition. She was quite deaf in one ear and had been told by a prominent surgeon that unless she had some rather extensive surgery done on the nose she would lose the hearing in the other ear also. She was principal in charge and part owner of a school for girls and had in addition the financial responsibility of keeping a family. She was told that in my opinion the operation was unnecessary and, furthermore, there was no necessity for assuming she might grow deaf in the other ear. Her hearing was examined from time to time for a period of five years. She was not seen again for fifteen years at which time, at the age of sixty-five years, her hearing had remained the same—for about twenty years. Though the hearing in chronic progressive deafness usually gradually gets less and less with years, there frequently comes a time when it becomes stationary and remains so for a long while, and no, one can say with truthfulness that this particular patient may not be found among one of these.

Before beginning treatment it is well to have a plain talk with our patients and tell them just what the outlook is for betterment and give a general outline of treatment. Here conservative optimism is essential.

Our patients naturally want to know two things. First, "Can my hearing and annoying symptoms be improved, and, in case this is not possible, am I going to become deaf?"

With the exception of the fortunately few patients who have oto-sclerosis or who are suffering from acoustic neuritis, such as boiler maker's deafness, it is my practice to look on their future as cheerfully as possible.

In nervous or apprehensive patients it is well not to stress the necessity for operations in the beginning of treatment, although we may have this in mind at the time. Too early insistence may cause them to take flight. The proper treatment of nose, naso-pharynx and throat to my mind is of the greatest importance, and the correction of any disease or abnormality in these structures is most essential.

Unless the outlook for betterment is hopeless.

the patient is general told that it is possible for them to get some benefit from treatment but just how much improvement we can get cannot be determined until they have had some trial treatment. If they are willing to take from six to ten treatments in all, it is possible they may be made to hear better. If at the end of this time there is no improvement it would not be well to continue the treatments further.

Except as an instrument to determine the excursions of the drum head the Seigel otoscope should never be used. It has never done any good and the possibilities of doing harm are considerable. The same may be said in a greater degree of the Delstanche masseur.

The theory that sound waves cannot be properly transmitted to the cochlea when the joints of the little ossicles are stiffened seems reasonable, but any attempt to break up these adhesions does more harm than good to the hearing.

The condition of the Eustachian tube should be first looked into. It may be narrowed and admit too little air to the middle ear cavity, and again it may be over-distended. Both of these conditions are due to a chronic salpingitis caused by extension of a chronic naso-pharyngitis to the tube. Eustachian bougies in the later sub-acute or early chronic cases are sometimes a benefit. In the advanced cases, however, they are of little or no value in improving the hearing but sometimes help the tinnitus.

Kerrison some years ago suggested the use of a bougie which is stiff enough for the purpose but which can be bent without breaking. Select your catheter, run the bougie through the catheter until the tip is not more than one and one-half inches from the end of the tube. At the other, or distal, end of the catheter, bend the bougie sharply at right angles.

By this method we can also tell approximately how far the bougie is in the Eustachian tube without the necessity of marking the bougie. The use of a catheter should not be extended over too long a period of time, and when air is used afterward the Politzer bag should also be used in preference to compressed air.

The Dench menthol apparatus is a pleasant treatment but not nearly so effective in my hands as the Van Zandt apparatus. In this the crystals are heated and the warm medicated air forced through the catheter. I have one patient who has been getting this treatment intermittently for thirty years and another for fifteen years.

The use of the electrical aural vibrator in which the vibrations are conveyed through a large sized catheter to the Eustachian tube has proven a benefit in many cases.

The use of this instrument, however, is of less value in improving the hearing than it is in lessening the tinnitus, although I have several patients on whom this instrument has been used for a long number of years and who insist that they always feel better for a time after its use.

Treatment by this instrument by the use of the ear tips in which the vibrations are conveyed to the drum membranes directly seems to me to be absolutely valueless.

Applications to the Eustachian orifice should always be made after the use of the catheter. This is done by a flexible applicator—the end of which is wound with cotton. The applicator should have about the same curve as the catheter and the application is made in about the same manner in which the catheter is used.

Various solutions can be used, such as 20 per cent argyrol solution, iodine, and glycerine—about the strength of Mandl's solution No. 2 and occasionally 2 per cent silver nitrate is used. Sometimes an application made to the naso-pharynx of a very good formula given me by the late Dr. Skillern, which consists of 4 drams of tincture of iodine and 6 drams each of tincture of benzoin and glycerite of tannin, is a more pleasant application than Mandl's solution.

Recently Drury, of Boston, has called our attention to certain types of hepatic diseases in which there is associated impairment of hearing, tinnitus and vertigo. The ear condition in these patients is much improved by the treatment of the liver disease—more especially operations on the hepatic ducts and gall-bladder. Personally I can recall several patients who were much benefited by this and similar treatment. One patient, a lady, aged sixty-two years, had constant tinnitus and was so deaf that she could only hear a loud voice six inches from the ear. The vertigo was so marked that she could not sit on a chair long enough for a proper examination. She was given occy-crystine, a proprietary preparation, which is a standardized hyper-tonic solution

of sodium, magnesium, potassium and calcium salts. Within three weeks the dizziness, vertigo and tinnitus had disappeared and she could hear a moderately loud voice twenty feet. This patient should have had a gall-bladder operation but felt so good from the use of this treatment that she postponed having it done. She died about a year later from grippal pneumonia but her ear condition remained very satisfactory.

We now come to the question of operative treatment of the lymph adenoid tissue. Personally I have never seen a patient over twenty years of age whose hearing was permanently benefited by removing the tonsils. Sometimes they will hear better for a while after the operation but this improved hearing generally relapses. This state of affairs, it seems to me, is due to the fact that they have come too late—at a time when the acoustic nerve has been subjected too long to continued chronic poisoning.

Since Emerson wrote his article, some years ago, I have been constantly on the alert to find this "sentinel gland" of Cohnheim, but have not been able to demonstrate its presence in most cases examined. The use of the words "sentinel gland" in this connection seems a rather poetic one. The word sentinel, as we know, means one who watches and stands guard, usually over an army. In this case, however, instead of standing guard over an army, these glands are supposed to guard the health of individuals and prevent dissemination of infection. It is only when this lymphatic gland, situated at the angle of the jaw, becomes so diseased by repeated assaults from sore throat that the barrier of the lymph nodes has been overcome and the perceptive apparatus is badly diseased long before the conductive apparatus.

We have all noticed that chronic deafness advances in cycles in many cases. When this condition can be demonstrated it seems that we are justified in advising tonsillectomy even in the absence of tender glands or any apparent chronic tonsillar disease. Personally, I know of no absolute way in which to exclude a diagnosis of chronic tonsillitis. Frequently I use a sterile glass suction tube applied to the tonsil after the throat has been thoroughly cleansed by a mild antiseptic solution. When the secretions obtained in this way are cultured and show either haemolytic streptococcus or streptococcus viridans in fairly numerous colonies, this further strengthens the diagnosis of chronic disease. Any tonsillectomy which is performed in these cases should be done with the understanding that, while it may not improve the hearing, it will probably keep things from getting worse.

Last autumn a man, fifty-five years of age, living thirty-eight miles from Harrisburgh, consulted me for tinnitus, vertigo, dizziness and impaired hearing in the right ear. His condition had gotten so bad that he was hardly able to manage his barber shop. Though the tonsils were much diseased, he was violently opposed to any operation. He was treated twice weekly by the McAuliffe suction and irrigating apparatus and immediately began to get better. After eight weeks of such treatment the hearing had improved from one foot to twelve feet for the whispered voice and the vertigo and tinnitus had entirely disappeared. He was advised to discontinue treatment for a time but at the end of two weeks he reported some return of dizziness. In as much as he was compelled to make an automobile trip of at least seventy-five miles in order to get this treatment, insistence was made on his having the tonsils removed. He has not been seen here since but it has been reported to me that he has relapsed to his old condition.

The importance of clearing up all dental infections has already been mentioned. That diseased teeth can cause bad hearing as well as vertigo and tinnitus has long been recognized. A dead tooth is in most cases a diseased tooth and potentially can do much harm. Frequently, however, we encounter considerable difficulty in persuading such patients, especially women, to have these teeth extracted.

We will do well in some cases to supervise the diet of our hard of hearing patients. Overeating or under-eating should be regulated. Lack of proper nourishment will produce a mild secondary anemia and this places an additional load on the patient. Some women with small families who do their own cooking will be found in this class of the under-nourished. Whenever possible it is well to insist that they go to a near-by restaurant and get at least one good nourishing meal every day. In these anemic patients bi-chloride of mercury, 1/24—1/32 grain, in compound tincture gentian three times daily is a good tonic. Sometimes the

addition of potassium iodide, 5 grains to this dose, is of value.

Consensus of opinion of the more enlightened medical profession seems to be that if we are to secure better hearing in future generations, we must begin our examination and treatment of the hearing with the school or pre-school age.

In this rambling talk I have tried to give you my own personal experience in the treatment of chronic progressive deafness rather than that which you will find in the textbooks.

In conclusion, I would say that in the beginning of this disease the treatment is best managed by the rhinologist, but later on it will require the best thought and skill of both the rhinologist and otologist to obtain even moderately good results.

224 *Pine Street.*

MEDICAL SERVICE IN JAILS AND PRISON CAMPS IN VIRGINIA.*

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The Commission. On August 15, 1932, at the instance of the Commissioner of Health and the Commissioner of Public Welfare, the Governor of Virginia authorized the detail of the Assistant Commissioner of Health as the Medical Advisor to the Department of Public Welfare. In commissioning him to this duty the Governor had this to say:

"In view of the fact that there are 100 county and 16 city jails in the Commonwealth, not to mention numerous city and town lock-ups with an average daily population of 3,000 prisoners, there can be no doubt with the evidence at hand, that efficient central medical supervision by the Department of Public Welfare is a necessity."

More than twenty-five thousand dollars ($25,000.00) a year is spent for jail medical service, and the Governor's communication indicates that the lack of intimate knowledge as to the character of such service calls for inquiry, and that the question as to whether the medical service to prisoners generally is adequate as to quality or quantity or is such as to reflect credit upon the State penal system ought to be determined.

Questions.—The following questions require an answer:

Are County and City authorities providing facilities for the proper treatment of sick prisoners? Are the sick segregated from the well? Are proper hygienic conditions maintained at the jails? Is proper economy exercised in the administration of State funds used in this connection? These questions and others naturally arising out of them are sought to be answered through—and again I quote verbatim from the Governor's letter,—"A regular, competent, disinterested medical inspection service. The whole relationship between the penal system, particularly the farms for misdemeanants and road camps on the one hand, and the jail population on the other, requires continuous expert medical service and advice."

Agent and Attitude.—Whether the person delegated to this duty is prepared to fulfill expectations remains to be seen. He is glad, however, of the opportunity to speak to a group of medical men on the subject and to clarify if possible any misapprehensions that may exist as to what is sought to be accomplished and to state his attitude in regard to the medical service at present existent.

In the first place he will assume that the doctors upon whom the duty falls to look after prisoners are competent to do the job. He, is, therefore, prepared to consult with them as to their methods, and to enter into their plans for improving jail medical service. They presumably from intimate association with the problem know more about the matter than he has yet been able to learn, and consequently he most emphatically does not propose at the outset at least to assume the role of instructor. Up to this time the jail physicians he has had the privilege of interviewing officially have proven to be in the main old friends and practitioners of standing and experience. From these he has received the most cordial reception and without exception tenders of assistance and cooperation.

A Medical Task.—Anyone who knows anything about the jail population knows it to contain an undue proportion of mental and physical incompetents. That these incompetents should be judged by the standards which guide the conduct of normal individuals is one of the pathetic and apparently incurable maladjustments of society. To mitigate and where possible to correct the ill effects of society's ineptitudes in so far as such respond to medical methods, is a job for medical men.

Medical men, i. e., jail physicians, are in

*Read before the Southside Virginia Medical Association at Piedmont Sanatorium, Burkeville, Va., September 13, 1932.

touch with the prison population in more or less desultory fashion. The State provides a rate of pay for the medical care of ill prisoners and fixes a maximum yearly stipend for the doctor's services. This pay was fixed in 1887 and cannot exceed $500.00 in any one year. $.75 a day is allowed for one patient, and where there is more than one $.50 a day only for attention to each additional one of them may be collected.

Medical Service.—In most of the county jails the doctor visits the jail only on call. Few of these jails have a place where the doctor can quietly examine a patient and administer drugs or remedies requiring aseptic technique or surgical manipulation; consequently, his treatment is necessarily more or less perfunctory. Such conditions are satisfactory neither to the doctor nor the patient, and have been the occasion for many complaints. The hit or miss method of arriving at a diagnosis, and the gunshot prescription method of effecting a cure, serves as we all know to give relief in the majority of cases that the doctor sees, but the exceptional case is constantly arising to render such a method wholly unjustifiable under any circumstances, even, shall I say, for jail prisoners.

The attitude of the public, which is reflected by the officials elected by the public, has been for a long time that anything is good enough for a jail bird. "He's an enemy to society, so 'treat him rough.'" He may, as the jail cards record, be committed simply for non-payment of a fine for violation of traffic law, or for "possession" (that is, possession of liquor), or he may be a housebreaker, forger, or murderer, but the fact remains that he is a ward of the State and entitled to humane treatment along with the discipline necessary to his case.

Medical Honor.—The State having established the principle that among these humanities is medical care as needed, the honor of the profession is engaged to see that he gets it. Up to the present, neither the Department of Health nor the Department of Public Welfare have had a medical man on their staffs who could give time and thought to the medical aspects of the State's duty to those who have been arrested and confined. The newly appointed medical advisor to the Department of Public Welfare seeks to perform this service.

The principal medical problem in relation to jails is in connection with treatment of the venereal diseases, syphilis and gonorrhea. The principal public health problem lies in enforcement of proper segregation of such cases. As indicated previously, there are few jails in which there are facilities for proper examination and treatment of prisoners, and, consequently, when ill, they are rarely given the best attention. Modern diagnosis and treatment, as every doctor knows, demands a quiet room and an irreducible minimum of equipment. Neither of these is available in Virginia jails.

A man with open syphilis should be given salvarsan which, for its administration, demands that the patient be in a recumbent position, in such an environment as to permit of aseptic precaution. Gonorrhea cannot be satisfactorily treated in a jail cell, and neither can the injuries that are the natural accompaniments of brawls so often preliminary to arrests.

Bricks Without Straw. — The perfectly competent jail physician has more often than not to deal with the prisoner's injury in a manner unsatisfactory to himself or send him to a hospital for treatment by men often no better able than he to meet the needs of the situation were he furnished by county, city, or State with the proper equipment at the jail.

The law authorizes the Board of Supervisors of a county and the governing bodies of the cities to adopt rules for the care of jails and the inmates. This authorization has been, in very many instances, ignored; and where rules have been adopted, they are more or less of a dead letter, as are many of the statute laws dealing with jails and their conduct. The practice most in vogue in reference to the jail physician is simply for the jailor to call him when the prisoner complains of being ill, and when he arrives the doctor questions the patient in the narrow cell where he sleeps, and makes such examination as is possible in the immediate presence of at least one other prisoner, and in the steel cage jails, generally, in the hearing of many others whose open-work, contiguous cells, admit of no privacy whatsoever. It would be invidious indeed for anyone to criticize adversely medical results achieved under such circumstances.

It is beside the mark to say that these are the conditions obtaining in many of the poorer homes to which the doctor is called, for jail prisoners are State charges, and service by the State should approximate something better than that which by necessity is the portion

of the abjectly poor over whom the State exercises no medical control.

Hopes.—It is in recognition of such facts that the Departments of Health and Public Welfare approach the problem of jail medical service. The situation demands action. If more satisfactory service can be secured with reasonable promptness and within the limits of present resources, well and good. If less is being spent in some places than is needed to effect improvement, this fact will be shown. If more money has been allotted yearly than is necessary to do the job properly in certain instances, then by readjustment here and amplification there, a more uniformly satisfactory service may perhaps be secured. If economies can be effected, so much the better. These, however, will be a by-product rather than an immediate object. Such is our hope in regard to jail medical service.

Care in Camp.—In regard to medical care in the prison road camps which serve as outlets for the crowded jails as well as for the penitentiary, the following is true: Medical service to these is secured by arrangement with some local physician. The service demanded of the camp physician is such that physicians have generally been unwilling to serve on the basis of pay allowed jail physicians. The penitentiary authorities have, therefore, found it expedient to make a contract with a local physician on a monthly basis, in order to secure competent and regular medical attention.

The sanitary arrangements of these road camps are excellent. It was the lot of the present medical advisor some thirteen years ago to put into effect at the road camps the regulations, sanitary and otherwise, adopted jointly by the State Health Department, the Penitentiary Board, and the State Highway Commission. It is a matter of pride to these three State agencies that no other penal camps in the country are superior in any respect to those in Virginia. It is the hope of the Departments of Public Welfare and of Health that conditions in the jails may be in time brought to a similar standard of excellence in regard to sanitation, and that the medical service in both may be elevated to the highest practicable plane.

"The only man who never makes a mistake is the man who never does anything.—*Theodore Roosevelt.*

THE NEED FOR RESEARCH IN MENTAL HYGIENE.*

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Mental hygiene developed from psychiatry but has reached out beyond the study of the abnormal into the normal and has changed its goal from the understanding of mental disease to the understanding of all human behavior, both the well adjusted to life and the maladjusted. The approach also has become more and more scientific, as it has ceased to be guided by interpretations and theories on learning through observation and experience certain definite facts about the causes and kinds of behavior. On top of each fact have been placed others until now at this early date in the life of this new science the accumulated data looms up as a guidepost to greater things.

It is often asked, suppose we do educate the parent, still more suppose we do get an abnormal mental disease in its beginnings, what can be done about it; can you save the child? Do you know that delinquency is caused by the environment, and cured by its correction? Does delinquency really lead to crime and can mental disease and major behavior disorders be prevented by anything we make use of at the present time?

To answer these questions, let us see what facts have been accumulated. It has been shown that, as a usual thing, two-thirds of the delinquents entering the juvenile courts for the first time can be expected to report later as adult criminals. In Boston, however, the Child Welfare Agencies state that only one-fifth of their delinquents fail to adjust. A twenty-year review of the work by Healy and Bronner, in Chicago, shows sixty-one per cent failure with male delinquents and forty-six per cent failure with girls instead of the expected seventy-five per cent. So we have this encouragement to continue the work with delinquents.

Burgess and Shaw have shown the effect of local environment. In so-called "interstitial zones" lying along railroad tracks and between better neighborhoods the boys are almost 100 per cent delinquent, while in the neighboring zones there is almost no delinquency. This suggests that further sociological study would

*One of a group of papers read at the Virginia State Conference on Childhood and Youth, held at Richmond, November 23-24, 1931.

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offer a great reward. Freeman has studied the intelligence of six hundred children before and after their exposure to controlled environments, showing distinctly that the intelligence rating of the child varies with the intellectual level of the environment. This is an obvious fact, perhaps, but to have it in black and white brings courage to those who work with the retarded child.

Actual proof of the prevention of mental disease is, of course, hard to obtain although many facts as to causes have been collected. We know that the hyperactive child, while very troublesome, is more apt to adjust and to escape psychosis than the recessive, retreating child who tends to run into mental disease in spite of all that can be done. We know that insanity starts in childhood, that delinquency is one of the first steps toward crime. We also know that in those cities where behavior problems are attacked early juvenile delinquency and insanity have ceased to be increasing burdens.

There are as yet no answers to the total situation, yet many things have been learned about the individual child, as it has been demonstrated many times that criminal tendencies can be changed and that mental disease can be prevented and in its incipiency cured. But we are just on the threshold. We need more facts, more guideposts; we must study the individual, the group, the race and the nation. There is need for the biochemist, the anthropologist, the sociologist, the economist as well as the physician.

In Virginia the situation, while similar to that in other states, is in many ways unique. The citizens of this State must work out their own problems, therefore, and can only do so through careful and systematic study. There are several of these problems that are of great interest. Why of the 48,082 individuals committed to jails last year, are there so many juveniles and young adults? What effect does jail life have on these children? Then there are 100,000 children in this State that did not attend any school in 1929-30, and 59,659 white children and 35,863 colored failed to pass, while 69,051 were dropped from the schools. There were last year 247 homicides in the State and the suicide rate increases each year.

The problem of the feebleminded and isolated rural native white must be solved. One State mental hospital had an admission rate of over 90 for one month and there are over 10,000 on the rolls of the mental hospitals. New York State with its great urban population has 73 per 100,000 in mental hospitals while the rate for comparatively rural Virginia is only 10 less.

The jail, the penitentiary, the large State hospitals, are not the answer to these problems. We must seek fundamental causes. $100,000,000 were spent on 300,000 mental patients in the instutions of the United States last year, but less than one per cent of this went for a search for causes. Rosanoff states that mental health can be bought, and certainly if five per cent of the $2,000,000 spent for the care of the mental sick in this State could be used for study of means of prevention many hundred thousand dollars could be saved. But we have no such funds and there is practically nothing done.

In conclusion, let me suggest a few problems just at our hands and easily investigated.

1. What is the mental status of the prisoners inhabiting our jails? (If not all the jails at least one jail.)
2. What environments manufacture these individuals?
3. There are perhaps 50,000 feebleminded in this State, but we have no authoritative surveys. One county or one city in which a thorough study of this kind was made might affect the whole educational system.
4. The cost of the care of the mentally sick increases yearly. How wise it would be to spend a sum for adequate research in this field where the reward of study is so promising that it seems obvious.

Disorders of the personality which include both mental disease and crime are understandable and can be prevented as well as cured if we will just give to the problem the time, the money and the cooperative effort the magnitude of the problem justifies.

THE GENERAL PRACTITIONER IN RELATION TO MENTAL HYGIENE.*

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The field of activity for the general practitioner, it may be said at the beginning of this paper, has no specified boundaries or limitations,—the whole man is ours to study. The general practitioner is not supposed to

*One of a group of papers read at the Virginia State Conference on Childhood and Youth, held in Richmond, November 23-24, 1931.

know all about any particular portion of the body, but he is at one time or another called upon to minister to the complaints, defects and diseases of every part of the human anatomy, and is expected to have a fairly accurate knowledge of them all.

The feeling is pretty general among physicians that nervous and mental diseases and the problems of psychiatry are outside of their sphere, and that the practice of medicine does not include dealing with what we call mental hygiene. I am convinced that this position cannot be reasonably maintained by any thoughtful, careful and conscientious physician. God created man, body, mind and soul. The Great Physician himself administered to all three of these. We, in the performance of our duties as physicians, must as far as possible treat the whole man.

The healthy individual is one who possesses a sound mind in a sound body, which means that good health does not simply presuppose a strong, vigorous body, but a body governed and directed by a normal, well balanced mind. In the study of the body and its diseases we must not overlook the fact that man has a mind as well as a body.

The history of medicine is the story of struggle from darkness and superstition, step by step, through the years, until we find ourselves today as a profession having learned much but still searching and finding much still to be added to our store of information. In the past few years there have been numbers of campaigns for enlightening the public and profession in certain particular aspects of medicine and in reference to certain diseases, as, for example, cancer, tuberculosis, venereal diseases, pellagra, etc.

And now more recently the mental hygiene movement is on. The people must be informed, the medical profession must also be educated and informed, and their active interest and cooperation secured.

It has not been long since it was considered more or less of a disgrace to have tuberculosis, or cancer, or leprosy. "Too often the terms 'lunacy' or 'insanity' conjure up disturbing visions of restraint and violence." In the light of our present knowledge all these diseases are the everyday problems of the general practitioner, and he cannot treat one and reasonably feel justified in neglecting any of the others.

Quoting Dr. E. A. Strecker, of the Jefferson Medical College, "The sooner knowledge of the principle on which psychiatry is founded becomes diffused among the ranks of the general practitioner, the sooner will they learn some very useful lessons which may be applied in their every day practice. Very often in the patient who has mental disease, we have simply a case for diagnosis. From such a point of view, the general practitioner, as well as every other brother specialist and laboratory expert, has something to contribute. There is only one conception that is worth consideration, and that is that so-called insanity is simply a disease and deserves the same careful and general medical attention as other diseases whose cause is in doubt, as, for instance, cancer."

Mental hygiene has been defined as the "science and practice of the preservation of mental health," and would mean study and research finally leading towards prevention and cure of mental diseases. It would seem impossible for the general practitioner to escape the responsibility of informing and educating himself in the care and treatment of this class of cases. A few figures and statistics may help to emphasize this statement:

Dr. D. C. Wilson, who has made a careful survey in this state, tells us that 1 per cent of our population, because of nervous and mental disorders, needs segregation; 2 per cent in addition require special supervision outside of institutions, or about 50,000 in this state outside of hospitals, jails and penitentiaries.

The physicians of this state are, in a large measure, responsible for the present care of this 50,000 or more, for under the present conditions of our modern life, the present unemployment situation, and the contentions and accidents incident to idleness, unrest and dissipation, there is no means of predicting how much these figures may be augmented.

The conditions are no better in other states and are similar to those in our own. The number of patients in nervous and mental hospitals in this country far outnumbers those in all other hospitals combined.

Among the causes of mental disorders, or conditions bearing on mental disorders, we may list heredity, unfavorable environment, physical disorders, diseased foci, convalescence from illness, conditions at certain periods of life, addiction to drugs, alcoholism, epilepsy, luetic infection, etc. These are all important from the standpoint of the general practitioner.

In many cases he alone knows the history, and with the advice and cooperation of the psychiatrist and his own influence with the patient and the family, he can accomplish results that would otherwise be impossible to attain.

In the carrying out of certain prophylactic measures the general practitioner can accomplish a great deal—in advising against the marrying of the physically unfit, those of low mentality, epileptics, and criminals, using his influence in advising sterilization of the same class, advocating proper hygienic laws, regulating marriage, etc.

It seems to me that it is hardly necessary to stress the question of responsibility of the general practitioner in the face of the great need as shown by these figures. There are comparatively few specializing in psychiatry and mental diseases, and of necessity the general practitioner must treat the great majority of these borderline and mental cases outside of institutions. The great need for special knowledge in these cases should stimulate the general practitioner to study and make preparation for treating mental and nervous cases, although many consider this outside of their particular line of work.

The present activities for the prevention and treatment of mental disorders in this and other states are directed toward informing the public and the medical profession and conducting mental clinics for children and adults. I know from personal observation of mental hygiene clinics in this state that the cooperation and hearty support of general practitioners in their various communities are earnestly desired, and that the success of the clinics is largely in proportion to the cooperation accorded by the general practitioner. Any program proposed or adopted for handling the mentally sick outside of hospitals must fail if it is not endorsed and backed up by the general practitioner. At this time when the Department of Clinical Education of the Medical Society of Virginia is endeavoring to provide opportunity for post-graduate education of physicians all over this state we should not fail to stress the importance of holding clinics on this very important subject, and make it possible for every general practitioner to better qualify himself for treating and caring for those who are mentally sick.

In conclusion, let us not forget the thousands outside of institutions needing the intelligent care of physicians, many of whom, if neglected, will later have to be hospitalized, adding to the already heavy economic burden of the state and nation.

STAPHYLOCOCCAL INFECTIONS OF THE KIDNEY WITH SPECIAL REFERENCE TO KIDNEY CARBUNCLE.*

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In the March number of the *Journal of Urology*, I reported a striking case of kidney carbuncle. Since publishing this article a second patient with this interesting condition has come under my care, and it therefore seems worth while to consider these two cases together and to summarize the histories, physical findings and pathological lessions in the 93 instances of kidney carbuncle recorded in the literature.

A carbuncle is one of the end-results of a hematogenous infection of the kidney cortex. The pelvis of the kidney is usually not involved by a carbuncle. It is because the gross appearance of this lesion is almost identical with that of the ordinary carbuncle, which we are accustomed to see on the back of the neck, that it is called a kidney carbuncle.

The staphylococcus is almost always the infective organism and the renal condition can in the majority of instances be proved to be secondary to staphylococcal infections elsewhere in the body, such as furuncles and paronychiae. In other words, a kidney carbuncle is a circumscribed metastatic inflammation of the renal cortex caused by the staphylococcus.

Young reported finding the staphylococcus in 49 per cent of the cases in a series of 356 kidney infections. Although other authorities have found the incidence of this type of infection to be somewhat lower, practically all are agreed that the staphylococcus is one of the commonest causes of acute renal infections. Frequently the staphylococci produce only minute lesions in the kidney cortex and in a short time the infection dies out and the organisms disappear. In such instances the patients are moderately ill for a period of about ten days or two weeks and then make a complete recovery. When, however, the resistance of the patient is not sufficiently great to destroy the staphylococci, the inflammation progresses and the condition becomes more serious.

*Read before the Baltimore City Medical Society, January 22, 1932.

Frequently perinephritic abscesses develop and occasionally, as in the two cases which I am about to report, true renal carbuncles. It is believed by some that the kidneys of patients who have just recovered from an acute staphylococcal infection are particularly susceptible to infections by the colon bacillus. It is not uncommon in an acute renal infection to obtain at the onset of the condition cultures of staphylococcus aureus and at about the same time that these organisms disappear from the urine for colon bacilli to take their place.

Some interesting experimental work by Dyke seems to indicate that the cocci and the colon bacilli are apt to invade different portions of the kidney. In infections by cocci the lesions are usually found in the cortex of the kidney, whereas the colon group of organisms show a predilection for the pelvis and collecting tubules. The cocci usually lodge as emboli in the vessels that carry the blood to the glomerulus. This hypothesis that different groups of organisms show a special predilection for different parts of the urinary tract has also been recently emphasized by Bidgood. However, no very satisfactory explanation for this bacterial selectivity has been presented.

As has been said, the patients who are able to overcome the acute staphylococcal cortical infections usually do so in about two weeks. The onset of the infection is apt to be rather sudden. Severe pain develops over one or both kidneys and a chill promptly follows. Pain is sometimes quite severe, simulating that of renal colic and radiating down the course of the ureter to the genitalia. Bladder symptoms are usually absent as are also nausea and vomiting. A moderate elevation of temperature is the rule. The leucocyte count is raised. The infrequency with which pus is found in the urine is striking. Staphylococci can quite regularly be found in the sediment even though negative urinary cultures are sometimes obtained. This is probably due to the fact that in some cases the bacteria are dead when excreted in the urine. These acute staphylococcal infections run a stormy course during the first week. After this there is a marked improvement of all symptoms. The temperature returns to normal by the 14th day and the pain disappears. Unless some complication develops the patient makes a complete recovery.

Sometimes the clinical course of acute staphylococcal urinary infections is much milder than that just described. Patients are encountered who give positive staphylococcal cultures from both kidneys but whose general condition is apparently excellent, there being no elevation of temperature or prostration. It is possible that in such cases the cocci have involved the pelvis of the kidney and not, as they usually do, that portion of the kidney afferent to the glomerulus. Perhaps it is because of the impossibility of obtaining proper drainage of inflammatory products that patients having lesions afferent to the glomerulus are usually much more seriously ill than those having lesions in the kidney pelvis and collecting tubules.

The treatment of the uncomplicated cases of staphylococcal infections is entirely medical. The patient should be kept in bed at complete rest and fluids forced. As the pathological process does not involve the pelvis of the kidney, cystoscopy and pelvic lavage are of no therapeutic value. While most authorities feel that urinary antiseptics given by mouth are of little proved value, my experience with hexylresorcinol in staphylococcal infections of the urinary tract has convinced me that this drug is often decidedly helpful in coccal infections of the urinary tract, although personally I have never obtained any results from its use in infections due to the colon bacillus. In uncomplicated staphylococcal and streptococcal urinary infections marked improvement often follows the use of intravenous injections of neo-arphenamine. Without going into a detailed explanation of the involved pharmacology, it should be pointed out that it is the neo or formaldehyd radicle of this drug that affects the cocci; ordinary salvarsan is, therefore, in these conditions of no therapeutic value.

The commonest complication that develops in the staphylococcal infections of the kidney cortex is a perinephritic abscess. As soon as the inflammatory process has penetrated the kidney capsule and extended to the perinephritic tissue, we are dealing with a condition that should no longer be treated medically and prompt surgical interference is indicated. In a series of 48 cases of acute staphylococcal infection of the kidney reported by Nesbit perinephritic abscesses developed four times. There are some urologists who claim that the majority of all perinephritic abscesses are sec-

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ondary to staphylococcal abscesses in the kidney cortex, and that it is only because the kidney itself is not inspected when these cases are operated on that cortical abscesses are not found more frequently.

A much rarer but quite interesting and important complication that sometimes develops in staphylococcal infections of the renal cortex is kidney carbuncle. A summary of my two cases of kidney carbuncle is hereby presented. The more recent one will be reported first.

J. H., aged 22, white female, was admitted to the University Hospital (Baltimore) on September 25, 1931, complaining of pain in the right flank. In January of the same year the patient had had a large carbuncle on the back of her neck. In February she had developed a dull pain in the right side of her back. There was at that time no fever, no chills, no gastro-intestinal or urinary symptoms. The general examination at that time was negative, except for slight tenderness over the right kidney region. In January the patient had been cystoscoped. The bladder specimen and culture and specimens and cultures from both kidneys had all been negative. A plain X-ray and pyelogram of the right kidney had been taken. These were interpreted as normal. As the examinations had not revealed any definite pathological condition the patient had received no further cystoscopic treatments. During the next seven months she had almost constantly a dull pain in her right side. There were, however, no urinary or gastro-intestinal symptoms. At about the beginning of September her condition rather suddenly became worse and she was compelled to go to bed. She was seen by Dr. Anthony Buchness, who had her admitted to the University Hospital.

Examination—September 25, 1931: The patient appeared to be very ill. Temperature 102°. Pulse 120, respiration 20. The right thigh was held flexed and in adduction. There was definite tenderness over the entire right side of the abdomen and a mass could be felt in the right flank in the region of the right kidney. The percussion note was tympanitic over this mass, showing that there were loops of intestine over it and that it was probably retroperitoneal. The catheterized specimen of urine was negative and also the urine cultures. *Cystoscopic examination:* The bladder appeared normal. Both kidneys were secreting freely. Specimens and cultures from both kidneys were negative. An intravenous differential phthalein showed that in half an hour each kidney excreted 30 per cent—entirely normal figures. The plain X-ray showed a definite mass near the lower pole of the right kidney, but the right pyeloureterogram was normal. In spite of all the negative urinary findings and the absence of bladder symptoms, an operation was decided upon. A pre-operative diagnosis was made of a right perinephritic abscess and the likelihood of finding at operation in addition to this condition a metastatic staphylococcal abscess of the kidney cortex was mentioned.

Operation—September 29, 1931: The usual kidney incision running parallel to and just below the last rib was made. A large perinephritic abscess was opened and some 300 c.c. of thick greenish pus were evacuated. The kidney capsule was greatly thickened. It was stripped from the kidney. In the mid-portion of the anterior surface of the kidney five small abscesses were found, all lying close to each other in a definitely circumscribed area. The lesion strongly suggested a beginning carbuncle. Drains were inserted down to this area and the incision was closed. The cultures taken at operation from the perinephritic abscess and from the small cortical abscesses gave a heavy growth of staphylococcus.

The procedure was done entirely under gas anesthesia. However, immediately after the operation the patient developed a pulmonary condition which necessitated her transference to the "air-conditioning chamber." This pulmonary complication was first thought to be a pneumonia but was later considered by the medical service as an instance of post-operative atelectasis. The patient's condition improved rapidly as soon as she was admitted to the "air-conditioning chamber," and from then on she made a slow but satisfactory convalescence. She was discharged from the hospital on November 17th, fifty days after operation. When she left the phthalein output was found to be 60 per cent, showing that her renal function had not been appreciably affected by the small abscesses in the cortex. Two months later the patient returned for a final examination. She stated that since leaving the hospital she had gained twenty pounds and that during this time she had absolutely no symptoms. Examination showed the incision to be entirely healed. The right kidney was still

palpable but was not tender. A catheterized specimen of urine was negative.

In this case the patient developed pain in her right kidsey region one month after having a carbuncle on the back of her neck and it was not until seven months later that she showed any signs of sepsis, although during this entire period the pain in the kidney region persisted. The particular strain of staphylococcus at the onset of the disease must have been of low virulence and yet sufficiently resistant not to be destroyed by the body's protective forces. It is interesting that the cultures obtained at cystoscopy were sterile, although those obtained at operation showed a heavy growth of staphylococcus aureus. The cocci had apparently remained in the kidney carbuncle and had not filtered through the glomeruli into the kidney pelvis and thence into the voided urine. The diagnosis was made on the history and on the palpation of the perinephritic abscess which could be felt on abdominal examination. The cortical lesion would not have been found if the kidney itself had not been carefully inspected.

A summary of my other case of kidney carbuncle is as follows: F. P., aged 18, white female, was admitted to the Church Home and Infirmary on December 9, 1930, complaining of pain in the left flank. One month before her admission she had had a very severe sore throat, and after she had been sick in this way for about two weeks she suddenly developed pain in the left flank. Nausea was present but no vomiting. The temperature rose to 102°, and the pulse rate to 120. There were no urinary disturbances. The menstrual history was not significant.

On examination in the hospital the patient appeared to be very ill. She complained bitterly of pain in the left flank, held the left thigh flexed, and was unable to lie on the left side. The general physical examination was essentially negative. Careful study of the chest showed no pulmonary changes and the bases of the lungs descended normally on inspiration, although deep breathing caused pain under the left costal margin. Palpation under the left costal margin and over the left kidney region posteriorly elicited slight but definite tenderness. There was none on the right side. Pelvic examination was essentially negative. The temperature on admission was 101.4°, the pulse rate was 120, and the leukocyte count 9,000. The urine contained no albumin, sugar, pus or red blood cells. In spite of the absence of any urinary symptoms and the negative urinary examination it was my impression that we were dealing with some pathological condition in or around the left kidney and for this reason a cystoscopic examination was decided on.

Cystoscopic examination — December 10, 1930: A No. 9 Kelly cystoscope was used. The bladder appeared normal. Both kidneys were catheterized with No. 8 opaque catheters. No pus was found in the specimens coming from either kidney, and negative cultures were obtained from both sides. A differential intravenous phthalein was then carried out. The dye appeared from the right kidney in seven minutes. In the first half-hour the right kidney excreted 45 per cent phthalein and in the second 15 per cent. From the left kidney the dye did not appear for thirty minutes, showing a marked lengthening of the normal appearance time, and in the next thirty minutes the left kidney excreted only 15 per cent phthalein. The plain X-ray was negative, but the pyeloureterogram of the left side was of decided interest. The upper calyx was unusually long and the middle calyx did not fill with sodium iodide, so that a filling defect was produced such as is seen in cases of kidney tumors. After seeing the picture we had obtained, we immediately re-injected sodium iodide and took a second picture which gave similar results. This repetition of the pyelogram ruled out the possibility of an error in technique. The ureterogram showed a definitely dilated ureter, strongly suggesting that there was a stricture of the ureter at a point a little above its entrance into the bladder.

The course in the hospital was carefully watched and the patient was examined daily. The pain in the left flank continued without lessening, but the urine remained negative and no urinary symptoms developed. On December 15th, I was able to feel, for the first time, a mass in the left kidney region. The temperature had been gradually getting higher until it had by this time reached 102.8°, and the leukocyte count had risen from 9,000 to 16,000. Thinking that the patient had a perinephritic abscess with possibly some lesion in the kidney itself, an immediate operation was decided upon.

Operation—December 15, 1930: Under gas anesthesia the usual kidney incision was made, the muscles were divided and the lumbar fascia

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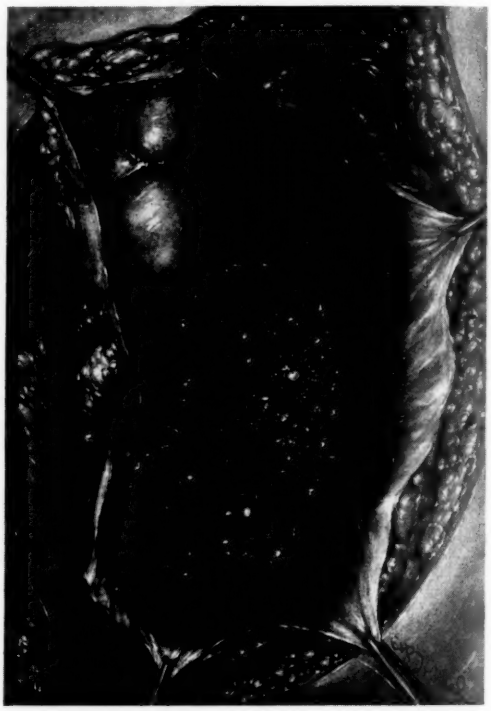
opened. A small amount of sero-purulent fluid was found between the fatty and fibrous capsules of the kidney, showing that some perinephritic infection was present. This fluid contained flakes of pus in it, but it was thin and watery, not thick and creamy. The kidney was then delivered into the incision. It presented a very striking appearance. The true capsule had been separated from the kidney by sero-purulent fluid of the same type as that found on the outside of the capsule. The capsule was opened and divided over the entire course of the kidney and the kidney itself inspected. On its anterior surface, extending from a little above the mid-point down almost to the lower pole, there was a lesion which in appearance was identical with a carbuncle such as is seen on the back of the neck. A raised circular area formed the outer border of the lesion. This outer border was dark purple in color and definitely indurated. The center of the lesion showed numerous suppurating points and a depressed crater, which was quite soft to the touch. The rest of the kidney seemed somewhat congested but showed no other abscesses. The lobulations of the entire kidney stood out unusually clearly, suggesting the fetal type of kidney. The pelvis was small and normal. There were no stones present.

I was at first undecided whether to remove the kidney or whether to simply strip back the true capsule and drain the carbuncle. As the patient was young, in very good general condition, and as the differential phthalein test had shown that the involved kidney was doing considerable work, I decided not to do a nephrectomy but to drain the carbuncle; it would have been almost impossible to resect it as it involved such a large portion of the anterior portion of the kidney. As has been said, I had already split the entire length of the true kidney capsule. No incision was made in the kidney; it was returned to the renal fossa and drains were placed down to the carbuncle. Very fortunately for the patient, Dr. Guy Hunner happened to be nearby and I at once called him in to see this unusual lesion. His advice that I treat the patient conservatively played a large part in causing me to decide to save the kidney. The drawing by Miss Elizabeth Broedel of the carbuncle as it appeared at operation was made from the descriptions of the lesion given her by Dr. Hunner and myself. The culture taken at operation from the carbuncle yielded a heavy growth of staphylococcus aureus.

The patient was very ill for some time after the operation. It was necessary to dress the incision daily, as it was of the utmost importance that free drainage be maintained from the kidney to the outside until the carbuncle had healed. For three weeks the patient had an evening temperature of over 100°, and frequently it was considerably higher. On two occasions she had chills and her temperature went to 103°. We interpreted these exacerbations as being due to some obstruction in the drainage, for always after thorough dilatation of the drainage tract the temperature would come down again. On the twenty-third day the evening temperature for the first time came down to 99°, and from then on the convalescence was uncomplicated. She was discharged from the hospital with her incision healed on the fifty-third day after her opera-



Anterior surface of kidney showing the carbuncle.

The lesion extends from a little above the mid-portion of the kidney almost to the lower pole. A raised circular area forms the outer border of this lesion. The center of the lesion shows numerous suppurating points and a depressed crater. The rest of the kidney is somewhat congested but shows no other abscesses. The lobulations of the entire kidney stand out unusually clearly, suggesting the foetal type of kidney.

tion. We were fortunate in having available in the laboratory of the hospital a staphylococcal bacteriophage with which Dr. V. H. Norwood had been working. The incision was washed out daily with normal salt solution and 10 c.c. of this bacteriophage were injected through a small rubber tube down to the region of the carbuncle. It seems not unlikely that this accessory treatment played a considerable part in bringing about the recovery of this patient. Certainly the absence of any secondary staphylococcal infections in and around the edge of the incision was probably due to the use of the bacteriophage, for the development of secondary abscesses around the incision has been one of the complications frequently reported in other cases of carbuncle of the kidney that have been drained.

An intramuscular phthalein test done a few days before the patient left the hospital showed that in two hours she excreted 60 per cent phthalein, a normal figure for the two kidneys. After the operation there was never at any time any pus or albumin found in the urine. It is, therefore, evident that in this particular case the correct procedure was carried out and that by simply draining the carbuncle we saved a kidney of relatively good function. However, it is probable that if we had performed a nephrectomy the convalescence would have been shorter and that the patient would have been saved the numerous painful dressings that were necessary in order to maintain free drainage down to the kidney.

In this case the particular strain of staphylococcus must have been extremely virulent for in a few weeks a young woman, whose general condition had been excellent, developed an unusually large renal carbuncle. Probably her youth and strong constitution played a large part in bringing about her recovery.

A rather thorough study has shown that, including the cases just recorded, ninety-three instances of kidney carbuncle have been reported by thirty-nine different authors. Only a small number of the articles on this subject have been written in English and some of the very best ones have been published by Russians. Those by Smirow, of Leninograd, and by Rjasanzewas are particularly instructive.

Carbuncle of the kidney is encountered most frequently in patients between the ages of twenty and forty. The youngest patients with this condition of whom we found records were both ten years of age. One was a boy and the other a girl; both recovered after operation. The oldest patient in this series was a man of fifty-six. He died in twenty-four hours after operation and at autopsy it was found that his was one of the very rare cases in which a carbuncle had developed in both kidneys. Our statistics show that the average age of women with carbuncle of the kidney is five years below that of the men.

It is interesting that of the ninety-three instances of carbuncle fifty-seven were found in males and only twenty-three in females. In thirteen cases the sex was not recorded. The greater susceptibility to this condition of the kidney of the male, and especially the middle-aged male, may be explained by that fact that not infrequently in men there is some back pressure on the kidney due to obstruction from the prostate and lower urinary tract which reduces the resistance to infection of the kidney cortex.

There is a slight difference for the two kidneys as regards incidence. In this series the right kidney was involved in forty-three instances, the left in twenty-nine. In eighteen cases the side was not recorded. There have been only three records of carbuncles in both kidneys. Two of the three patients with bilateral carbuncle died, and it is to be noted that they were the oldest patients in this series, one being fifty-six and the other fifty-five years old. In the third instance the age of the patient was not given, but the history is of interest. A carbuncle of the kidney was drained and five weeks later a carbuncle in the other kidney was diagnosed and also drained. The patient made a complete recovery. This case was reported by Stuckey, a Russian observer.

It is surprising that the number of carbuncles of the kidney that have been observed is so small when one considers the frequency of boils, carbuncles, and paronychiae, all of which may act as primary foci from which staphylococci can be transported to the kidneys. A few urologists feel that probably a large number of these kidney lesions occur, but that only a small percentage of them are diagnosed. A small carbuncle may develop in the kidney cortex, penetrate the kidney capsule and, after causing a perinephritic abscess, may itself heal up when simple drainage of the perinephritic abscess is carried out.

Probably perinephritic abscess frequently develops from carbuncles. Indeed, there are some who feel that all perinephritic abscesses

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arise in this manner, although the cortical lesions are not always detected. Certainly, a sufficiently large percentage of these cases do develop in this way to make it imperative that in all operations for perinephritic abscess the surgeon should carefully inspect the kidney for cortical suppuration.

Microscopic sections of a kidney carbuncle show lymphocytes, plasma cells and polymorphonuclear leucocytes. Staphylococci can generally be seen scattered through the tissues. It is often possible to recognize the individual minute abscesses by the strands of connective tissue that separate them from each other.

It is not clearly understood why in children pyogenic infections of the skin and subcutaneous tissue should metastasize to the bone and cause osteomyelitis, whereas in adults they are primary foci for metastatic lesions in the soft parts, particularly the kidneys. Nor is it understood why the staphylococcus should be able to get a better foothold in the kidney cortex than any other pyogenic organism. It has been stated, however, that the power of the staphylococcus to break down urea and to use its split products for its maintenance and growth has something to do with this characteristic.

In the ninety-three recorded cases of renal carbuncle there was in seventy-six instances a definite history of a primary focus from which organisms could be transported to the kidney, and in three additional cases there was a history of trauma to the side on which the carbuncle developed. Twenty patients gave a history of carbuncles of the skin and subcutaneous tissue, thirty-four of furuncles, fifteen of superficial infections, one of an acute sore throat, and four, including one of my patients, of a respiratory infection developing shortly before the onset of the kidney carbuncle. Twelve of the carbuncles were on the back of the neck, three on the back, three on the buttocks and in one instance the location was not mentioned. In the cases in which furuncles acted as the primary foci they were found on the neck six times, on the head three times, and on the forearm three times. The primary furuncle was found once in each of the following locations—the nose, the foot, the thigh, the suprapubic region, the labia majora and the penis. In sixteen cases the site of the furuncle was not given. In the fourteen superficial infections recorded as foci for the kidney carbuncle, paronychiae were observed four times and infections of the finger five times. In one instance each an abscess of the scrotum, felon of the thumb, tonsillar abscess, suppurative parotitis, suppurative orchitis and an abscessed tooth were recorded as the primary foci. Neff recently reported the case of a man who developed a carbuncle of the kidney following a periostitis of the sternum from which a staphylococcus had been grown. The cases in which respiratory infections acted as primary foci are of special interest to me, because in one of my cases of carbuncle of the kidney there was a definite history of a preceding respiratory infection. Smirow feels that respiratory infections are just as apt to act as primary foci as the superficial staphylococcal invasions, but including my case there are only four instances recorded in which the history of a preceding respiratory infection is given.

As has been said, a kidney carbuncle is one of the end stages of a very severe staphylococcal infection of the renal cortex. Sometimes it is evident almost from the onset of the disease that one is not dealing with the ordinary type of staphylococcal infection that usually clears up in about two weeks. High fever and marked prostration may be suggestive, but seldom does one suspect the presence of a renal carbuncle sufficiently strongly to advise operation until marked tenderness develops over one kidney. If a mass become palpable in one flank, operation is indicated, but often the development of this mass means that the infection has already extended to the perinephritic tissue.

A patient, whose case was reported in 1905 by Israel, had the most acute onset of symptoms of any in this series. This man, thirty-seven years of age, had had a carbuncle on the neck for twenty-three days when he received a severe blow in the left side. Half an hour later severe pain began in the left flank, and at operation a few days after a carbuncle was found involving the middle third of the posterior surface of the kidney.

The symptoms in renal carbuncle occasionally come on very gradually. Medical treatment is instituted but at the end of two weeks the temperature does not begin to fall and it becomes evident that the patient is very seriously ill. Cystoscopy may be helpful in making the diagnosis, for in practically every instance in which a differential phthalein was carried out, there was a delay in the appearance of the dye from the affected side and the

excretion of phthalein from the kidney containing the carbuncle was less than from the other.

Pyelograms have been taken in only sixteen cases of renal carbuncle, including my two cases. This is, of course, largely due to the fact that the attending urologists did not wish to subject extremely ill patients to any examinations that were not absolutely necessary. However, the results obtained in these sixteen cases were of decided interest and, unless the patient's condition absolutely contraindicates it, it would seem that a pyelogram should be obtained, since it may be of great help in making the diagnosis. In twelve of these sixteen cases some abnormality could be observed in the pyelogram. In the case reported by Mathe and in one of my cases the pyelograms were almost identical. Both showed an elongation of a primary calyx with a filling defect medial to this primary calyx, giving a picture not unlike that caused by a neoplasm. The explanation for this picture is that the cortical carbuncle presses on one of the calyces, shutting it off and thus preventing the sodium iodide from entering. It is of interest that in four of the sixteen patients on whom pyelograms were taken changes were noted in the ureter on the side on which the renal carbuncle was found. In Kretschmer's case and in my own the ureter was dilated. In Mathe's case there was kinking at the ureteropelvic junction.

The absence of bladder symptoms is one of the characteristic features of these cortical lesions and is a factor that increases the difficulty in diagnosis. Only a few patients complain of polyuria: dysuria and hematuria are almost never present unless in addition to the carbuncle there is some other urological complication.

The early diagnosis of carbuncle of the kidney can frequently be made in the case of a patient who is known to have recently had a boil, carbuncle or other staphylococcal infection, who is complaining of pain in one flank, who is extremely ill with a high septic temperature, who on examination shows definite tenderness under one costal margin but whose urine contains little or no pus. Nevertheless, one is often left in uncertainty and, as a matter of fact, a correct diagnosis was made in only a small percentage of the cases reported. Indeed, it is at times impossible to differentiate a carbuncle of the kidney from the acute septic embolic kidney, which is studded with small abscesses, and from the cases of perinephritic abscess. After all, the differential diagnosis between carbuncle of the kidney and perinephritic abscess is only of academic interest. In both groups of cases an operation is indicated, but it must be emphasized that in all cases of perinephritic abscess the kidney itself should be inspected to see if there is not a carbuncle present in addition to the perinephritic infection.

Sometimes more serious mistakes in diagnosis may be made. Patients sometime continue to have an elevation of temperature for months before there is any indication of renal disease. Such cases are apt to be diagnosed influenza, or some respiratory infection, as happened in four patients in this series. Three patients with carbuncles of the right kidney were thought to have acute appendicitis and subjected to unnecessary abdominal operations.

The details of the operative findings are not fully given in all the reported cases, but I have collected about all the information that is available. As has been said, in forty-three instances the carbuncle was found on the right side and in twenty-nine instances on the left. In the rest of the cases the side of the involved kidney was not mentioned. In only three instances were carbuncles found in both kidneys and it is especially interesting that in only three cases were two carbuncles found in the same kidney. This finding somewhat strengthens the contention of those who feel that carbuncles of the kidney should be treated conservatively and not by nephrectomy.

In forty-eight of the ninety-three cases there was a definite note that a perinephritic abscess was present. Probably in many other cases there was a perinephritic involvement but the condition was not recorded. In a few cases where there was no perinephritic involvement the carbuncle was not detected until the kidney was carefully palpated through a normal-looking kidney capsule. The capsule was noted to be definitely thickened in fifty instances. In my second case the capsule appeared fairly normal. A factor of interest in this case was that purulent fluid was present under the capsule and completely surrounded the kidney. The presence of this subcapsular fluid, I believe, has not been mentioned in any other case.

The kidney itself was described as being definitely enlarged in only twenty-nine of the ninety-three cases in this series. This demon-

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strates the fallacy of expecting the kidney to be so enlarged that it must be palpable before one can be certain that it is the seat of disease. When a mass can be felt in the flank, it often means that penetration through the capsule has occurred and that a perinephritic abscess has developed.

The poles, and especially the upper one, are apparently the sites of predilection for renal carbuncles, as this lesion was recorded as being in the upper pole twenty-eight times and in the lower fifteen times, while it was encountered only twelve times in the mid-portion of the kidney. It was mentioned as being on the anterior surface of the kidney in nineteen and on the posterior surface in thirteen cases.

Positive cultures were obtained at operation directly from the carbuncle in sixty-eight cases. It is not possible to tell from the records whether cultures were taken in the other twenty-five cases, but there is not a single mention in any article on this subject of a negative culture being obtained from a renal carbuncle. Staphylococci were the organisms grown in sixty-six of the sixty-eight positive cultures. In one of Kretschmer's cases the colon bacillus was found to be the infective organism. Jaffe, in one of his patients, a man fifty-five years of age with a gonorrheal urethritis, found gonococci in the renal carbuncle which developed later. In forty-eight instances the aureus vavariety of staphylococcus, in three the staphylococcus albus was grown, and in fifteen instances the type of staphylococcus was not reported.

Treatment

Although there has been an entire unanimity among those who have written on this subject that an operation is indicated as soon as the diagnosis is made, there have been great differences in opinion as to what procedure is preferable. Many writers, among whom should be mentioned Voss and Colmers, have strongly urged a nephrectomy in all cases of renal carbuncle. Indeed, Colmers removed the kidney in both of his two patients who happened to be only ten and twelve years of age. Other authorities, however, have been just as insistent that, whenever it is possible, the kidney should be saved and a more conservative operation be chosen. The conservative operation has usually consisted of incision into the renal carbuncle and drainage, but in a few instances other operations have been employed. In one case Israel excised the portion of the kidney that contained the carbuncle and the patient recovered. This operation was also performed by Barth on one patient and by Reschka on three patients. The latter surgeon feels very strongly that excision of the carbuncle is the operation of choice. Neff was able to enucleate with his finger the carbuncle in his two patients. Köhler, in two of his cases, made many small incisions into the carbuncle and into the surrounding renal tissue and then thoroughly saturated the kidney with a 2 per cent solution of rivanol. In my own case, in view of the fact that it would have been impossible to excise the carbuncle because of its size, the kidney capsule was incised throughout its length and drains were put down to the carbuncle. After operation, by irrigating the wound through a rubber drainage tube the carbuncle was kept constantly bathed with a solution containing a staphylococcal bacteriophage.

Only five patients in this series failed to receive operative help, and three of these died. In the case of one of the two patients that recovered, intravenous mercurochrome was used. Although the history of the case is suggestive, without an operation or autopsy, absolute proof of the existence of a carbuncle is, of course, lacking. In the other case, the carbuncle spread to the perinephritic tissue, forming an enormous abscess which later on perforated the colon. Fortunately, the patient did not develop a peritonitis and after the abscess had emptied into the colon she recovered. In two of the three patients that died without operation a similar sequence of events happened as in this last case, except that the abscesses perforated into the peritoneal cavity instead of into the colon and the patients died of peritonitis. It would seem that non-operative treatment is never justified in a case of carbuncle of the kidney.

A careful study was made of the results obtained in this series of cases by radical and conservative treatment, respectively. In forty-one patients a nephrectomy was performed at the first operation. Three of these patients died, giving a mortality of 7.3 per cent. Grouping the different conservative operations together, we find that of forty-seven patients five died, giving a mortality of 10.6 per cent. Four of these five fatal cases were treated by incision and drainage of the carbuncle. In the fifth an enucleation of the carbuncle was first carried out and later at a second operation a nephrectomy was performed. Two of the five

cases in which a nephrectomy was carried out after a primary conservative operation ended fatally. All of the five patients treated by excision of the carbuncle recovered, as also did the two patients treated by incising the kidney and soaking it in 2 per cent rivanol. In Aschner's and in my two cases decapsulation and drainage down to the carbuncle cured the patients.

My own feeling after studying the above figures and reviewing in detail the ninety-three cases of renal carbuncle in the literature, is that no hard and fast rules can be drawn up for the precise operation indicated, but in general the following recommendations may be appropriate:

As soon as the diagnosis of carbuncle of the kidney has been made, prompt operation is indicated. However, if the patient's condition does not contraindicate it, a differential phthalein should first be carried out, as this test may be a great aid to the surgeon in deciding whether or not it is advisable to remove the involved kidney. A low phthalein reading for the uninvolved kidney indicates that the surgeon should, if possible, save the one containing the carbuncle. A low phthalein output from the kidney containing the carbuncle does not necessarily mean that this kidney has been irreparably damaged and must be removed, for in many instances after the carbuncle has been drained the function of the kidney has returned to normal. The size of the lesion does not in itself decide the proper operative procedure unless at operation a very large part of the kidney is found to be involved by the carbuncle. However, as was true in one of my cases, the carbuncle may be so large that excision of the portion of the kidney containing it is not feasible, and if the operator intends to be conservative, he can do no more than incise and drain the carbuncle. It is probably a good rule never to perform a nephrectomy except under one or two conditions: (a) if the general infection is so overwhelming that it is absolutely imperative to remove as much of the infected tissue as possible, a nephrectomy is indicated. For instance, if the patient is having chills and a very high fever and is showing signs of septicemia, his best chance of overcoming the infection probably lies in removal of the kidney; (b) if a patient has good renal function in the uninvolved kidney and is in poor general condition either through advanced age or other pathological conditions in addition to the renal carbuncle, it is wise to remove the kidney so as to shorten the convalescence as much as possible.

It is hard to decide which of the different conservative operations that have been tried is apt to be most efficient. When it is possible to enucleate the carbuncle with the finger, as Neff was able to do in his two cases, this method of treatment seems to be ideal, but this can be accomplished only in rare instances. To me personally, excision of the portion of the kidney containing the carbuncle does not appeal because necessarily it is followed by considerable hemorrhage and introduces many bacteria into the blood stream. However, all of the five patients treated in this manner recovered. In my cases I simply freed the true capsule from the kidney and left drains down to the carbuncle. One is not justified in drawing conclusions from two cases, but in treating my next patient with carbuncle of the kidney, unless a nephrectomy is indicated, I shall try to enucleate the carbuncle with my finger, and, failing in this, shall carry out the following procedure: I shall make no incisions directly into the carbuncle nor attempt to excise it, but, after splitting the true capsule, shall drain directly down to the carbuncle. During the convalescence I shall see to it that the incision heals up from the bottom and that free drainage down to the kidney is maintained for a period of at least several weeks. If a staphylococcal bacteriophage is available, I shall use it, and shall hope that it will be as effective as the solution that Dr. V. H. Norwood furnished me with in the treatment of my first case of carbuncle of the kidney.

Summary

Two cases are reported showing kidney lesions of an unusual character. Moreover, the consideration of these cases in this paper has brought out two points, which we feel are of distinct clinical value: First, the importance of inspecting the kidney itself when operating for perinephritic abscess has been emphasized. Secondly, the attention of the general practitioner has been called to that fact that when he has a patient under his care with a carbuncle of the neck and this patient suddenly develops pain in one kidney region, the possibility of a serious lesion of the kidney cortex should be considered even though there are no bladder symptoms and the urine contains no pus or blood.

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DETACHMENT OF THE RETINA—DIFFERENTIAL DIAGNOSIS.*

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Dr. Simpson has pointed out in his paper that the idiopathic or simple detachment of

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the retina is almost always associated with a tear in the retina. This type of detachment is amenable to treatment in a fairly high percentage of cases. Normal central vision and an essentially normal field may be retained in many cases where treatment is instituted early. Therefore, the early diagnosis of detachment, and the type of detachment with which one is dealing, are most important for a successful end-result.

Detachment of the retina may result from inflammatory processes in the retina, choroid or vitreous, from tumors of the choroid or retina, or from choroidal hemorrhage. It may occur in systemic diseases, particularly nephritis.

The most favorable type of detachment of the retina is that associated with the retinitis of pregnancy. There is a sudden onset, a marked effusion, and if the cause is removed, a sudden relief. Detachments are met more commonly in this type of retinitis than in any other type of renal retinitis. These detachments are due to vascular degeneration and a generalized tendency to edema.

Choroidal exudation may result in an effusion, which pushes the retina away, thus producing a detachment much larger than the area of choroid involved. Careful examination will reveal evidences of a deep inflammatory process—such as deposits on the posterior surface of the cornea, and cellular elements in the aqueous.

Many so-called spontaneous detachments may be found to be due to uveal disease if a careful search is instituted.

Detachment of the retina has been reported in sympathetic ophthalmitis. The actual cause of the detachment is almost certainly a choroidal exudate.

Vogt considers that hole formation is rare in detachments due to choroidal inflammation, and that the recognition of such detachments is simplified if one finds other signs of inflammation.

Detachments due to choroidal effusion have a better prognosis than those due to retinal and vitreous degeneration. The lesion which produces the detachment produces a reaction which tends to cure it.

A choroidal sarcoma may simulate closely a simple detachment and because of the malignancy of the tumor early and accurate diagnosis is imperative.

The appearance of the detachment may help to distinguish it from the simple form. This detachment usually has a more solid appearance and is less apt to be tremulous. A tumor usually arises abruptly from the surrounding fundus and its surface is rarely thrown into folds. Later, however, when an effusion has led to a more extensive detachment the difficulty in diagnosis is greater. The retina overlying the tumor itself may show a yellow or yellowish-brown color—and the subretinal fluid frequently appears yellow.

Field defects or alterations of refraction may be the earliest symptoms. Distortion of the anterior ciliary veins may be noted in the region of the tumor if it is situated anteriorly —or if it interferes with the outflow in the vena vorticosae. A gradually increasing area of blindness is very suggestive of a neoplasm.

Lister holds that the presence of a hole excludes the presence of a growth, and that "if one can substantiate a history of sudden loss of sight from detachment, even though a hole cannot be seen, we know that a hole must be present, and we can with equal certainty exclude growth." This statement cannot be taken too seriously, but in the presence of a tear in the retina and no evidence of a tumor one is justified in being conservative.

Transillumination is invaluable in detecting the presence of a tumor even though the detached retina may be extensive. Any tumor formation, even though unpigmented, will prove more or less opaque and so cast a shadow. Several methods of transillumination have been described—all of which have their usefulness depending upon the area to be examined.

As a rule the tension of an eye containing a detachment of the retina due to a choroidal tumor becomes raised. The stage at which this occurs depends more on the site than on the size of the tumor. Tension may be raised in retinal detachment even though no neoplasm is present. Choroidal sarcoma with low tension occasionally occurs as a result of an iridocyclitis or degenerative change in the tumor.

Metastatic carcinoma may produce detachment of the retina. A careful history and physical examination will make the diagnosis less difficult.

In infants simple detachment of the retina may simulate retino-blastoma. Intraocular hemorrhage is frequent in the new-born. Lachman reported a case of an infant whose eyes were excised because of bilateral detachment

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simulating glioma; the detachment was due to hemorrhage.

Detachment of the retina may result from a contusion of the globe with the absence of a tear in the retina. This probably is the result of injury to the choroid followed by a serious effusion or hemorrhage. The prognosis in this type of detachment is favorable.

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THE PHYSICIAN'S PART IN DIPHTHERIA CONTROL.*

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It is now a well accepted fact that the incidence of diphtheria in a community cannot be greatly decreased by quarantine and isolation of recognized cases, the reason being that infection is frequently spread by mild unrecognized infections and carriers. It is also a well established fact at the present time that the incidence of diphtheria *can* be greatly reduced, if not eliminated entirely, by active immunization of well children. Small reductions in incidence usually follow immunization of 20 or 30 per cent of susceptible children; marked reductions follow 50 per cent immunization; and almost complete elimination follows 75 per cent immunization. As the successful control of diphtheria lies in the field of active immunization and not in quarantine, this paper deals only with the physician's part in active immunization.

Experience has shown that coordinated effort is required to succeed in immunizing a large proportion of the children of a community. Large scale immunization cannot, for a number of reasons, be done by practicing physicians alone, and cannot be done by health authorities without the cooperation of physicians. A program involving two groups is, therefore, required and the part played by the physicians' group obviously depends on the kind of program arranged by the health authority.

Suppose that the health authority sets up a program aimed to immunize each child early in the preschool period, probably at six months to one year of age. The well-to-do child is to be immunized as a private patient in the doctor's office, the indigent child in health department clinics, and the semi-indigent child in either of these places but under an arrangement providing for immunization at nominal cost. What is the doctor's part in helping to immunize each of these three classes of children?

As to immunization in the doctor's office, the physician may feel that his obligation is to immunize the child brought to him and that the health officer's obligation is to issue propaganda which will make parents bring in their children. This sounds logical and simple but it does not take into account the important position of the physician as the advisor of his patients. Is it not better for the relation of the patient and the physician if the public receives advice on this and other "keep-well" services largely from their own physicians rather than from the health officer? Should not the health officer say "Your child need not have diphtheria—ask your physician about protective treatment"? This kind of a statement sends in the patients, but leaves much of the educational work to the physician. It seems to me that the physician's part, therefore, is, not only the giving of the treatments, but explaining to the inquiring parent such items as the nature of the substance used, reactions, dependability, permanence and proper age.

To take further advantage of the physician's influence over his patients, health officers have devised schemes for sending educational messages to the public through the physicians. These may take the form of a notice on the wall of the physician's office, a pile of leaflets on the waiting room table, a slip mailed in the envelope containing the physician's statement, or a form letter sent when a child is six months of age. In order to avoid appearing as an advertisement of the physician, all of this material should appear under the health department's or medical society's name. When other forms of educational material are being circulated, there is no danger of this material appearing as anything but a part of the general diphtheria immunization campaign.

Unfortunately, the plan of immunizing children in private practice sometimes receives a set-back because a few parents complain that they took their children to their doctor and were told that he did not wish to give the injections. To prevent this difficulty, there should be an understanding that all physicians whose practice includes the care of children will stand ready to immunize at reasonable

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charge any of the children of their practice who are brought to them.

The immunization of *indigent* children is a responsibility of the Health Department and the only question is whether all of the work should be done through free clinics or whether the physicians should be asked to treat indigent patients as part of their practice and receive a small reimbursement of about 50c per injection as compensation. The latter method has been tried in Detroit and, with intensive educational work of Health Department nurses, urging parents to go to physicians' offices, it has proven very effective—though expensive. Such a plan might be tried in rural areas where the population is too scattered to justify free immunization clinics and where one physician covers a small area and his practice includes almost all the people in the area.

The most difficult part of a diphtheria immunization program is that of reaching that part of the public which lies between the well-to-do and the indigent. This is the large group which welfare workers are puzzling over and which physicians so often see as patients who can pay for office visits, but not for hospital treatment. In diphtheria immunization, they are the parents who can pay the fee for immunization if reduced to 50c or $1.00. In a great many instances they can pay this only with such sacrifice that they cannot be induced to bring their children unless the treatments are entirely free. The only way to be successful in reaching this intermediate group and at the same time avoid drawing the public away from established contact with their own physicians is for the Health Department and the physicians to work out a plan aimed directly to reach this group at low cost. One plan which has been tried is that of asking the doctors to set aside separate office hours so as to immunize groups of children at one time and thus avoid repeated interruptions to their other practice. This arrangement amounts to establishing temporary health centers in the doctors' offices. When large numbers of children are brought in, a public health nurse may be assigned to assist the physician. Another plan might be to set up low cost immunization clinics and to have children sent in to them only on the request of their own physicians so that the families would thus retain their connection with their regular physicians.

Problems of this kind have to be worked out for each community. No scheme can be drawn up in advance and expected to be perfect, and a successful plan can be established only by persistent effort and by experimenting with different methods. The health officer and a committee or representative of the Medical Society are the ones in a position to do this, but they will succeed in setting up a satisfactory program only after putting in hard work over quite a period of time.

REMOVAL OF WENS—A SIMPLE TECHNIC.

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Wens, or sebaceous cysts, are of fairly common occurrence, most often perhaps about the head or neck, and, aside from their unsightly appearance, occasionally break down and degenerate into malignant conditions. As a rule the smaller they are the easier they are to remove without rupture of the sac. Wens which have enlarged to the size of a hickory nut or a walnut usually have become quite thin-walled and it is quite difficult ordinarily to remove these larger ones without premature rupture of the sac and expulsion of the cheese-like contents, which is followed often by more or less piece-meal removal of the sac wall. Having had quite a few of these larger wens to rupture in the course of removal, in spite of the most careful handling, search was made for a more efficient method of handling.

The skin over and about the wen is painted over with any suitable antiseptic and then infiltrated with a local anesthetic. Novocain may be used. An excellent local anesthetic for this work is composed of ¼ per cent butyn; 1 per cent antipyrin; 1 per cent (1-1000) epinephrin.

After a suitable wait for the anesthetic to become effective, the skin over the wen is carefully incised either with the cutting current needle, or with a coagulation knife hooked up to high frequency machine. This is bloodless and thus enables the operator to incise down to the sac wall, but without plunging the scalpel blade into the wen proper.

The wen usually is ruptured, if at all, during the subsequent efforts to dissect it free from the overlying skin and connective tissue.

It has been found that the elevators employed in submucous resection of the nasal septum permit the wen to be completely freed from its attachments without the slightest diffi-

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culty or danger of rupturing the sac. Using the sharp end of a Freer's submucous elevator carefully at first, the skin over the wen is slightly separated on each side of the incision; then further separation is made with the blunt end of a Freer instrument, after which the separation is easily completed with the double-ended Myerson elevator, which has a small sphere on one end and a slightly larger sphere on the other.

Too often operators confine the use of a given surgical instrument to the special piece of surgery for which it was designed, where, with a little ingenuity, that same instrument may be employed successfully in a number of other situations. I know that since improving the wen-removal technic, as above described, sac ruptures have been virtually done away with.

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TUBERCULOUS MENINGITIS IN CHILDREN: A REVIEW OF THIRTY-THREE PROVED CASES.*

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A statistical study of thirty-three proved cases of tuberculous meningitis occurring among infants and children has been made. The case histories were obtained from the records of the Cincinnati Children's Hospital and the Pediatric Department of the Cincinnati General Hospital between the years 1925 and 1930. By this study I propose not to add something new to the subject of tuberculous meningitis but simply to emphasize in an analytical manner certain earlier clinical manifestations of the disease which aid materially in making an early diagnosis and prognosis.

An early diagnosis of tuberculous meningitis is always hard to make especially in the absence of any history of exposure to infection with the specific organism. Even in moribund cases the diagnosis is difficult without accessory clinical measures such as ophthalmoscopic examination and examination of the cerebrospinal fluid, for there are many forms of meningitic diseases associated with increased intracranial pressure, clear fluid yielding no growth of organisms on ordinary culture media, and a moderately low cell count, which are not tuberculous meningitis.

In the initial stages there are no definitely diagnostic symptoms. The onset is typically insidious. It may simulate many other conditions, especially the meningism of acute infections as well as other types of meningitis or encephalitis or poliomyelitis. It should not be considered that the child's ailment is nothing more serious than chronic indigestion.

TABLE I

Number of Cases Showing as First Symptom:	
Vomiting	8
Headache	7
Stupor	6
Restlessness and Irritability	5
Spasticity	2
Pain in Neck	1
Fever	1
Anorexia	1
Diarrhoea	1

The clinical diagnosis was corroborated in each case of this series by either demonstrating the specific organism in the cerebrospinal fluid or at necropsy.

AGE. It has been repeatedly demonstrated the remarkable predilection the disease has for young children and infants. Thirty and three-tenths per cent of this series occurred in infants, 51.5 per cent in children between the ages of two and five years and 18.2 per cent in older children. The average age was 37.9 months. The youngest case occurred in an infant of eight months and the oldest in a child of thirteen years. In the Holt and Howland series the majority of cases appeared in infants under one year of age. Peterman and Kahn[1] found the longest series between the ages of one and three years. Griffith and Mitchell found the greatest number of their cases between the second and third years, as did Pearson and Wyllie. Neff, in Abt's system of Pediatrics, states that 60 per cent of tuberculous meningitis is seen in children under three years of age.

EXPOSURE. Particular effort was made in taking the histories to ascertain contact in any form with individuals having pulmonary tuberculosis. There was a definite history of contact in about 42 per cent of the series. A history of active pulmonary tuberculosis in a member of the immediate family was obtained in 35.4 per cent. Myer[2] reported 105 cases in children of which 73 per cent gave no history of contact. These figures are similar to those of H. Koch[3] who in a study of seventy-five cases found only 23 per cent having tu-

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bercular parents. In the Herben and Asserson[4] series of 135 cases there was a history of contact in only 19 per cent and no history of contact in 81 per cent. By careful investigation of the same cases they obtained a definite history of contact in 56 per cent.

Intradermal Reactions. In performing these tests 0.1 c.c. of a 1:1000 solution of O. T. Tuberculin was injected intracutaneously. Both the Bovine and Human Types were used. Greater concentrations were not used. At the end of the observation periods twenty-two of twenty-eight cases tested had reacted positively to one or both types. Table II indicates the

Table II

Positive Human Tuberculin Reaction	Positive Bovine Tuberculin Reaction	Positive Reaction From Both H&B Tuberculins
20 or 71.4%	13 or 46.4%	11 or 39.2%

positive reactions to the types of tuberculin used. The specific organism in tuberculous meningitis is, in the vast majority of instances, of the human type. In only two cases was the bovine tuberculin reaction positive when the human type was negative. Herben and Asserson state that in forty-seven specimens of cerebrospinal fluid showing tubercle bacilli, in only three instances were they bovine in type. In Sisson's[5] twelve cases, eight gave positive reactions and four were negative. He explains that such cases of tuberculous meningitis giving a negative intradermal reaction may be due to an overwhelming infection preventing the reaction from becoming positive or the child's resistance may be so reduced by the chronic process elsewhere in the body that they lack the fight, so to speak, to produce a reaction to tuberculin.

Duration of Disease. The average time existing between the onset of symptoms and death was 21.8 days. The shortest time was 6 days and the longest 55 days. In the Peterman and Kahn series the shortest period was 8 days and the longest 4½ months. Their largest number of cases died in the third week. Sisson[5] reports a case lasting only 5 days.

Other Foci. It is almost generally conceded that tuberculous meningitis is never primary but this fact is often hard to demonstrate even at necropsy. There was evidence of tubercular infection in parts of the body other than the central nervous system in 42.4 per cent of this series. Twenty-one per cent had miliary tuberculosis and the same percentage had tuberculosis of the tracheobronchial or hila glands. Four had pulmonary involvement resembling the adult type of infection and 5 had tuberculous perintonitis or enteritis. One had a tubercular infection of the hip and developed tuberculous meningitis while receiving hospital treatment for this condition. There was no clinical evidence at any time of pulmonary, glandular or miliary infection in this patient. Another patient had a chronic otitis media but repeated attempts failed to demonstrate the tubercle bacillus in the purulent discharge.

In this review it was interesting to note that in three of the four patients who complained of abdominal pain and on whom autopsies were done, tuberculosis of the abdominal viscera was found.

History. In obtaining the histories, the presenting symptoms were of a nature as to lead the way for diagnosis of cerebral involvement of some sort. It is easy for the physician to underestimate the importance of vague neurological symptoms, regarding them simply as manifestations of the child's unstable nervous system to some sort of minor ailment. The chief complaints on admission were vomiting, persistent headache, stupor, restlessness and irritability, in the order of their frequency. One complained of neck pain, another of diarrhoea, while two complained of spastic arms and legs. One complained of fever only and another of a spastic jaw followed by clonic convulsions. Only one had a chief complaint of anorexia. The average length of the prodromal stage, that is, from the onset of the first symptoms until the more severe symptoms such as convulsions and coma, were manifest, was 11.9 days. The longest prodromal stage was 45 days and the shortest 6 days. Eight were admitted in coma.

Temperature. The temperature ranged from 99.3 to 108. In twenty-three cases there was a definite antemortem elevation.

Nervous System. The information obtained from a thorough examination of the deep and superficial reflexes aids material in making an early diagnosis for it is usually positive findings of the nature which justify a spinal puncture. Of course the great deviation of the reflexes depends on the stage of the disease.

TABLE III

OTHER SIGNS AND SYMPTOMS

Headache (over 2 yrs. age)	Vomiting	Anorexia	Constipation	Diarrhoea	Temperature				Coma on Admission	Abdominal Pain	Facial Weakness	Tubercles on Choroid
					Average High	Average Low	Average Terminal	Highest Recorded				
42.4%	66.6%	66.6%	48.4%	Noted in One	104.6°F	99.3°F	104.6°F	108. °F	24.2%	22.2%	9.0%	6.6%

The following reactions were recorded at the time of admission to the hospital:

Patellar Reflex—Exaggerated	16
Neck { Stiff	28
Neck { Normal	5
Kernig's sign { Positive	20
Kernig's sign { Negative	13
Strabismus	13
Nystagmus	5
Brudzinski's sign { Positive	22
Brudzinski's sign { Negative	2
Babinski's sign { Positive	16
Babinski's sign { Negative	5
Pupillary Signs	
Normal in reaction, size and shape	3
Reaction sluggish	6
Immobile	17
Irregular	2
Unequal	8

In reviewing the literature it seems to be the consensus of opinion that any alteration of the contour and reaction of the pupils is one of the most important signs which enables one to make an early diagnosis.

LEUCOCYTES. The leucocyte count ranged from 6,400 to 27,250. The average was 18,300. The average percentage of lymphocytes was 28.3.

CEREBROSPINAL FLUID

Character. Twenty-six of the spinal fluids were found to be clear, four hazy, two turbid and one xanthochromic. One of the patients from whom a turbid fluid was obtained had, a few days previously, undergone a mastoidectomy and a culture from the mastoid cells yielded a growth of hemolytic streptococci.

Pressure. The pressure was definitely increased in twenty-nine cases.

Globulin. Globulin was present in all cases in a variable degree. It is of interest to note at this point that the meningism of pneumonia, intestinal intoxication and many other acute processes may also increase the protein content of the fluid. In such cases the cell count is not markedly increased. This is important from the standpoint of differential diagnosis.

Sugar. Benedict's solution was not reduced in 8 of 15 fluids tested for sugar. Stewart[7] states that in his series the majority of cases had a lowered sugar content. In a few cases it was increased and in one instance there were 125 mgms. per 100 c.c.

TABLE IV

NEUROLOGICAL FINDINGS

Neck Rigidity	Opisthotonos	Exaggerated Peripheral Reflexes	Kernig's Sign	Babinski's Sign	Brudzinski's Sign	Spasticity	Paralysis		Eye						Slowed Respiration	Slowed Pulse	Cheyne-Stokes Respiration	Convulsions					
							Extremities	Deglutition	Nystagmus	Strabismus	Ptosis	Anesthesia of Cornea	Pupils					Twitching	Local	General	Tonic	Clonic	Terminal
													Dilated	Alteration in Light Reflex									
28 or 84.8%	15 or 45.4%	16 or 48.4%	20 or 60.6%	16 of 31 or 51.6%	22 of 24 or 91.6%	16 or 48.4%	3	11	5 or 15.1%	13 or 39.3%	2 Both Bilat	Noted in one case	17 or 51.2%	23 or 69.6%	8 or 24.2%	8 or 24.2%	17 or 51.2%	3	5	16	11	5	3
							42.4%											23 or 69.7%					

Colloidal Gold was entirely negative in four fluids tested.

Cystology. The cell count ranged from 34 to 820 per cubic millimeter, the average being 179. The majority of the fluids contained a predominance of lymphocytes which averaged 69 per cent. In two of the cases from whom a clear fluid was obtained, the polymorphonuclear cells predominated. In one of these cases the duration of the symptoms was 9 days and in the other 7 days.

Bacteriology. All cultures on ordinary media were negative with the exception of two cloudy fluids, which yielded growths of staphylococcus aureus and streptococcus hemolyticus, respectively.

Tubercle bacilli were demonstrated in fifteen of twenty-three cases (65.2 per cent) by direct staining of the cerebrospinal fluids. Positive findings were obtained in 3 of 5 fluids on subsequent examinations which were previously negative. In the majority of cases the organisms were found enmeshed in the fibrin webs. The pellicles were transferred under water onto a glass slide by means of a wire loop. Positive findings were demonstrated in a few cases by staining the sediment after centrifuging the fluid for at least one hour, and one positive result by means of the alcohol precipitation method. Hemingway[8] in studying 138 cases found the organism in 135.

Fifteen of the fluids in question were injected intraperitoneally into guinea pigs and the specific organism was recovered in thirteen (86.6 per cent). The average pig's life after injection was eight weeks, the longest being ninety days and the shortest forty-four days.

Film Formation. A fibrin coagulum was formed in nineteen of twenty cases (95 per cent). Its time of formation ranged from two hours to twenty-four hours; the average was fourteen hours. Peterman and Kahn found webs in thirty-two of forty-seven cases. The web is often extremely difficult to see. Careful searching in different casts of light will often be successful when the pellicle had been previously overlooked. The fluid should be allowed to stand undisturbed if a web is expected to form.

Summary

1. The diagnosis of tuberculous meningitis is difficult without a thorough examination of the cerebrospinal fluid.

2. The earlier manifestations are variable but there are always present signs and symptoms referable to the central nervous system.

3. A history of contact can be obtained in over 42 per cent of the cases.

4. The intradermal reactions are not always positive.

5. In the vast majority of instances the human type of tubercle bacillus is the offender.

6. The disease has a remarkable predilection for young children and infants.

7. The cerebrospinal fluid is characteristic but may be altered by superimposed infections such as from otitis media.

8. The specific organism can be demonstrated in the cerebrospinal fluid in the majority of cases.

9. Guinea pig injection cannot be entirely relied upon to establish a diagnosis.

10. If a cerebrospinal fluid is allowed to stand undisturbed a pellicle will form in 95 per cent of the cases.

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GENITO-URINARY TRACT AND RECTAL PROBLEMS AS A PART OF GYNECOLOGY.*

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In considering a subject such as suggested by the title of this paper, we should define the word gynecology, which is as follows:

"That branch of medicine which treats of women's constitution and diseases, especially of the genital, urinary, and rectal diseases occurring in women"—Dorland.

The nerves which supply the cutaneous margin of the rectum originate in the sacral plexus and have to do with the motor and sensory functions. Those which supply the region above this margin are derived entirely from the sympathetic nervous system. Due to this fact, there are no intrinsic means of early de-

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tection of malignant, or other lesions involving the rectum and sigmoid. Until a growth has progressed far enough to involve the extrarectal structures, and to produce pelvic pain, or discomfort about the back, hips, etc., or abdominal pain and tenesmus due to obstruction, pain is not manifest; this appears late in rectal diseases.

Above the pectinate line (that is the junction of skin and mucous membrane), the lymphatics pass upward under the rectal mucosa to the sacral and hypogastric nodes. Below the pectinate line, the drainage is through the lymphatic channels which pass over the perineum and into the inguinal nodes. Anal fissure, infected hemorrhoids, rectal abscesses, etc., often cause inguinal adenitis.

The intestinal glands stop at the "ligne anorectal."

Buie states the records of the Mayo Clinic show that 3.4 per cent of all patients who register have hemorrhoids and that almost 8 per cent have symptoms referable to some proctologic disorder. Of those patients who have complaint referable to the bowel, 48.8 per cent have hemorrhoids.

I mention the frequency so that, on all gynecological examinations, this condition will not be overlooked, and so that such troubles when found may be corrected. The average age for females who have hemorrhoids is 45 1/10 years.

A bleeding from the rectum should always be diagnosed, ascertaining whether it is fissure, hemorrhoids, carcinoma or other foci of infection, in time to remedy same, rather than to treat palliatively for uterine, ovarian or tubal disease without an examination. Many patients give very inaccurate and misleading histories as to their illness, so that we are dependent on examination before drawing a final conclusion.

Hemorrhoidal disease microscopically is essentially a degenerative disease of the vein.

On considering diseases of the urinary tract, first we take up the urethra. We have gonorrhea, urethritis of non-specific origin, the urethral caruncle, and other infections. Stricture of the female urethra is much more commonly present than is recognized. A practical way of diagnosing this is to catheterize the patient before bi-manual examination, which will determine whether you can pass a medium size catheter without any great amount of pain or difficulty.

Cystitis is a very common finding in women who present themselves, thinking they have some uterine disorder. This is a most annoying and "nerve-racking" malady. For a cure many months treatment may be necessary. The patient should be told in the beginning of treatment that much time will be required to effect a cure; otherwise, she will stop before she has recovered. Long periods of a chronic cystitis will cause trabeculae to form and contraction of the bladder, causing the bladder capacity to be greatly reduced.

The female ureters are subjected to many infections, causing stricture which, if not relieved, will produce dilatation of ureter, and oftentimes permanent damage to the kidneys.

Another of the common problems in the treatment of women is pyelitis, also hydronephrosis, etc. These conditions are no doubt very potent causes of many of the other urinary infections. In many instances bacteria pass through the blood stream and become lodged in the kidney, later causing pyelitis and other urinary infections.

In the practice of gynecology, it is quite necessary to be either equipped to do, or to have a working basis with someone who does cystoscopic work, for this is a great help in the diagnosis and treatment of urinary tract infections.

There have been all too many appendices, tubes, ovaries, and even uteri removed, when a urinary infection was the seat of all of the patient's symptoms and trouble. This condition is not recognized as a result of ignorance on the part of the profession, but for the reason that we don't take time to investigate, or possibly turn the patient over to a urologist, who studies the symptoms from an entirely different viewpoint.

All Symptoms and Systems referable to the pelvic organs should be studied, and corroborated, if we hope to arrive at a correct diagnosis.

Infections from the rectum often travel through the lymphatics to the lymph nodes within the pelvis, and cause pain which is attributed to the uterus, tubes, or ovaries, simulating infection of the cervix, etc.

To do a rectal examination is easy if we will "school ourselves" into the habit of placing the patient in an abdominal position with head lowered, using a Hirschman's or other anoscope. Sigmoidscopic examination can be done in the office when indicated, but for most cases

a careful rectal examination with anoscope or proctoscope will eliminate nearly all of the "gynecological stumbling blocks," which are referable to this source.

To develop cystoscopic work is of very great value in the practice of gynecology, for there are many cases in which you can treat and effect a cure of all symptoms, if the urinary pathology is treated at the time the other symptoms are being treated. These cases would never be cured if this phase of their gynecological pathology is over-looked and goes untreated.

As operative surgery seems more spectacular, we are prone to jump at conclusions and operate before properly diagnosing our patients. To diagnose and treat sanely, many needless operations would not be done. When such operations have been done, it leaves the patient in a worse condition and the profession humiliated and made the poorer. For certainly we are "our brother's keeper," professionally as otherwise.

We should have the patient void just prior to getting on the table, or preferably catheterize her while on the table, as this will procure a non-contaminated specimen for microscopical examination. An empty bladder on examination is always necessary for accuracy in pelvic diagnosis.

After the bimanual, a rectal examination should be done. With one finger we can determine most of the gynecological troubles which are low down within the rectum.

A microscopical examination of a catheterized specimen of urine should be made where there is a question of an infection of the urinary tract, so as to eliminate this from the picture, for frequently this will clear the diagnosis.

As above stated, cystitis is one of the very frequent causes of pelvic discomfort, so much so, I think we might discuss a few of the fundamentals in its treatment. These patients, as a rule, are quite nervous, especially if their trouble has gone on for a long time, necessitating them getting up frequently at night to void, which interferes with their rest. This should be looked after and overcome.

So often when a patient comes in for examination and we have made a diagnosis of chronic cystitis, a prescription for a bladder sedative is given with the injunction that they take it with water and return within a few days if not better. What happens is this: they feel improved and then disappear for weeks or months to return later with a similar complaint, after which the condition has become more aggravated and more chronic.

I feel that when, on a gynecological examination, we find a chronic cystitis, we should at once explain to the patient what she has, and outline immediate treatment, explaining that it will take from six weeks to three or more months for her to get well with our using bladder irrigation and other forms of treatments as frequent as at least three times a week for a while. This should be in addition to the treatment which she is carrying out at home. If we will explain to the patient the necessity for and danger of not having this done, she will often get well; otherwise, she may never recover. Of course, if there is a stricture of the ureter or pyelitis present, this should be cared for at the same time.

Lots of patience and tact are required with many of these patients to keep them coming long enough to effect a cure, so I think it best to tell them in the beginning, so they will appreciate the time required for her to take treatment.

I have a patient now who came to me nearly three months ago with a proctitis and cystitis, who has received treatment elsewhere at intervals for the cystitis for eight or ten years, but never stayed long enough to be cured. She has been very patient and now seems much better. I mention this case as one of many that we all see, who can be benefited and cured if we will be patient with them and they with us.

With the many fascinating genital conditions we have to deal with, such as cervicitis, carcinoma of cervix and fundus, salpingitis, ovarian trouble, and—one of those which we are now on the lookout for more than ever before—*Endometriosis*, we are prone to not recognize the actual pathology while in search for the more remote conditions.

There is a surgical side to these conditions which should not be over-looked or under-estimated.

Many cases of chronic cystitis can be relieved to a certain degree by medicinal treatment, bladder irrigation, and topical applications, but where they are associated with a marked cystocele which, as a rule, is secondary to prolapsus uteri, which in turn is caused by a second degree laceration of the perineum, we cannot hope to effect a cure until we have oper-

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ated, doing a perineorrhaphy and an anterior colpotomy,—overcoming the mechanical handicaps present. Marked cystocele will cause a residual urine to remain the greater part of the time, and harbor a "breeding ground" for bacteria in the bladder.

When a stricture of the ureter is present, we can only expect pain and discomfort to remain until proper dilatation by cystoscopy has been done, to assure proper drainage for the infection above, the infection certainly playing the greater role.

In view of the many cases of urinary discomforts in women due to ptosis of the kidneys, kinks and angulations of the ureters, I feel a pyelogram should be done where there are urinary symptoms which are not otherwise clearly diagnosed.

To treat an infected bladder, where there is a stricture, dilatation or angulation of the ureter, or a marked pyelitis, hydronephrosis or pus in the kidney above, we can accomplish but little unless these conditions are corrected, for, as a parody, "we are trying to clear the stream by dipping the muddy water out of the branch below while the *old sow* is wallowing in the spring above." Certainly the sensible thing is to remove the cause, and other symptoms will be more easily relieved.

The same rule will hold true largely in rectal diseases, complicated with other pelvic troubles, for, unless hemorrhoids, fissure, and other foci of infection are removed, the patient will have trouble after the genital tract shall have been cured.

Conclusions

1. The nerve supply of the cutaneous margins of the rectum are derived from the sacral plexus. Those supplying areas above this region come entirely from the sympathetic nervous system.

2. Where urinary symptoms are present, a careful diagnosis should be made to eliminate urethritis, cystitis, stricture, dilatation, angulation, etc., of ureter, and pyelitis.

3. Chronic cystitis is a very frequent disease, requiring much time for treatment. This should be explained to the patient in the beginning, in order that she will stay for treatment long enough to be cured.

4. Many gynecological operations are done which would be eliminated if we were more careful in making our diagnosis with special reference to the urinary tract and rectum.

5. Cystoscopic and proctoscopic examinations are quite essential in the practice of gynecology, and for correct gynecological diagnosis.

6. Examination of the rectum and urinary tract in women is necessary to complete a gynecological diagnosis.

1111 *South 20th Streets* (*Five Points*).

Correspondence

The New Library Building of the Medical College of Virginia.

To Virginia Physicians:

At the beginning of this school year, the library of the Medical College of Virginia was moved into the new building which had been under construction for nearly a year. This new library building supplies the library with its first adequate and suitable home.

The building is situated on historic ground, being across the street from, and to the north of, the White House of the Confederacy; across the street from, and to the east of, the home of Alexander H. Stevenson; and diagonally across the street from, and to the northeast of, the home of Maury, the oceanographer of the Confederacy.

The building was built simultaneously with and connected with the home of the Richmond Academy of Medicine so that the two buildings, though owned separately, actually form one building and function as such. This is a very happy combination in which the college library serves as the practical working library while the academy part, with its club rooms and its priceless Miller collection of old books and silhouettes, serves the historical and social side of medicine.

To make the picture complete, the Medical Society of Virginia has its offices and headquarters in the same building so that with the college, the city and the State all together, it might be called the medical center of Virginia.

We invite the physicians of Virginia to use the library. We have not only books and periodicals on medicine, dentistry, pharmacy and nursing but also on the related sciences such as physics, chemistry, and biology; anatomy, physiology and bacteriology. The professional man in any of the health fields will

find, in most cases, that the library can supply all his needs. If he wishes to look up the latest contributions on any subject he will find all the necessary indexes and files of more than five hundred periodicals. If he wishes to do more extended study he may have a private room set aside for his exclusive use. If he is interested in Virginiana he will find many old books bearing the signatures of some of Virginia's most famous physicians. Those who cannot come to the library we shall be glad to serve through the mails.

We invite you also to help the library to grow. Scattered over Virginia are many old books, portraits and instruments of medical significance that will grow in interest with the years. We trust that, more and more, these treasures will be deposited with us where they will be safe from the great destroyers, fire and neglect.

E. C. L. Miller,
Directing Librarian.

Woman's Auxiliary, to the Medical Society of Va.

President—Mrs. William Lett Harris, 1112 Matoaka St., Norfolk.
President-Elect—Mrs. Joseph Bear, 3012 Monument Ave, Richmond.
Recording Secretary—Mrs. Fletcher J. Wright, 49 S. Market St., Petersburg.
Corresponding Secretary—Mrs. Charles A. Saunders, 1000 Gates Ave., Norfolk.
Treasurer—Mrs. Reuben F. Simms, 2034 Park Ave, Richmond.

Committee Chairmen of the State Auxiliary.

The following Committee Chairmen were appointed by the President, Mrs. William Lett Harris, to serve for the ensuing year:

Organization—Mrs. Joseph Bear, Richmond.
Assistants—Mrs. Lee E. Sutton, Jr., Richmond; Mrs. Meade Edmunds, Petersburg; Mrs. M. N. King, Norfolk; Mrs. T. Elmore Jones, Portsmouth; Mrs. F. W. Upshur, Richmond.
Program and Health—Mrs Southgate Leigh, Norfolk.
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Courtesy—Mrs. C. J. Andrews, Norfolk.
Resolutions—Mrs. N. T. Ennett, Richmond.
Historian—Mrs. J. Allison Hodges, Richmond.
Parliamentarian—Mrs. M. N. King, Norfolk.

As expressing the interest of the Medical Society of Virginia in the Woman's Auxiliary, the President, Dr. J. C. Flippin, has appointed the following as an Advisory Board to the Woman's Auxiliary: Chairman, Dr. J. Allison Hodges, Richmond; Dr. Southgate Leigh, Norfolk; Dr. Lee E. Sutton, Richmond.

News From Local Auxiliaries.

Auxiliary to the Norfolk County Medical Society

The Executive Board met at 10:30 o'clock on December 2nd, and the regular Auxiliary meeting was at 11:30. Mrs. Wm. Lett Harris brought greetings as the State President. Mrs. C. A. Saunders made a very interesting report of the meeting of the State Auxiliary in Richmond. Mrs. M. N. King told of social activities incident to the State meeting.

It was decided that the new filing system advocated by the National Auxiliary be adopted the first of the year. A Committee was appointed to endeavor to get a number of health education movies to be shown at the local movie theatres on Saturday mornings.

In place of the usual card party that the Auxiliary gives annually, it was decided to ask each member for $2.00, the price of a ticket for herself and her husband, and this money will be used in charitable work.

Auxiliary to Richmond Academy of Medicine

On Friday, November 25th, the Woman's Auxiliary of the Richmond Academy of Medicine gave a dinner in the new home of the Academy for fifty five-point children and a number of adults. These children had been selected as the most representative of their local communities from a wide area of the State.

The members of the Auxiliary responsible for this interesting occasion were Mrs. J. O. Fitzgerald, Chairman, Mrs. E. Latane Flanagan, co-chairman. Committee on Arrangements: Mrs. L. C. Pusch, Mrs. J. Arthur Gallant, Mrs. John S. Weitzel, Mrs. F. W. Shaw and Mrs. Sue Harwood. Ten other members of the Auxiliary assisted in preparing and serving the dinner.

An interesting feature of the meeting of this Auxiliary on December 16th was two papers,

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one by Mrs. Fred J. Wampler on "The Life and Work of Osler," and another by Mrs. Richard A. Bowen on "The Life and Work of Banting." At the same time Mrs. J. B. Stone reported on the recent meeting of the Woman's Auxiliary of the Southern Medical Association at Birmingham. Her presentation was most stimulating.

Tribute to Mrs. Freeman by the National President.

In accordance with the constitution of the Woman's Auxiliary of the American Medical Association, Mrs. James F. Percy, of Los Angeles, Calif., has become president of the Auxiliary, following the recent lamented death of Mrs. Walter Jackson Freeman, who was the able and beloved national president elected for the current year. Mrs. Percy has written the appreciation of Mrs. Freeman as follows:

"With feelings of deepest regret, the Woman's Auxiliary must record the passing of its National President, Mrs. Walter Jackson Freeman, at Philadelphia on October 27, 1932.

"Reared and developed in the environment of the highest standard of scientific medicine, her knowledge and sympathy together with her life-long experience, gave her an intimate understanding of many problems which otherwise might have seemed insurmountable.

"It has been a tribute to her that for so many years deep responsibilities have been entrusted to her vision, ability and wisdom, until finally the highest honors in the power of the Auxiliary members to give, had been bestowed upon her.

"Vivacious, energetic, a potent force whereever she applied her talents, she gave unselfishly to the last degree in her plans for the advancement and welfare of our organization.

"Life, in its strange and mysterious way of deciding for us when the day's work is done, brought to her the glad tidings of peace and rest, leaving to other hands the task of picking up the ends left loose by her trip to the Middle Western States and her fatal illness which immediately followed. To that end we shall, I know, all dedicate ourselves that the close of this fiscal year shall find as far as is in our power, the ideals and structure which she endeavored to build, consummated.

"Through sorrow our hearts will be newly welded together. Our efforts will be strengthened with a finer unity of purpose to which each, we ask, shall pledge herself in memory of the one who is gone.

"To my tasks, as her successor, I willingly devote myself and my best efforts, knowing the spirit of the Auxiliary and that the same loyal support and cooperation of the past will be vouchsafed to those officers whom she left to carry on.

"'Death did not delay her capture,
Sickness loosed her thong;
Out of the pain a rapture,
Out of the dark a song.'"

Auxiliary to the Southern Medical Association.

At the meeting of the Auxiliary to the Southern Medical Association, held in Birmingham, November 16th-17th, Mrs. Southgate Leigh, of Norfolk, Va., was made President-elect. Mrs. A. A. Herold, Shreveport, La., was installed as President, Mrs. C. E. Oates, Little Rock, Ark., retiring. Four Past-Presidents were in attendance: Mrs. E. H. Cary (wife of the President of the A. M. A.), Dallas, Texas, Mrs. Arthur McCormack, Louisville, Ky.; Mrs. C. W. Garrison, Little Rock, Ark., and Mrs. Jas. Newton Brawner, Atlanta, Ga. Two Past-Presidents of the Auxiliary to the A. M. A. were also present, as well as several members of the National Board. Two hundred and forty-six members were registered.

The Southern Auxiliary is composed of fourteen Southern States. Its project is "Research into the History of the Heroes of Early Medicine." There is a wealth of information yet uncovered on this subject.

The next convention will be held in Richmond, Va.

Truth About Medicine

In addition to the articles enumerated in our letter of October 29th, the following have been accepted:

Lakeside Laboratories, Inc.
Ampoules Dextrose (d-Glucose) 25 Gm., 50 c.c.

Lederle Laboratories, Inc.
Neocinchophen—Lederle
Tablets Neocinchophen—Lederle, 5 grains

Mead Johnson & Company
Mead's Viosterol in Halibut Liver Oil, 250 D.

H. A. Metz Laboratories, Inc.
Tablets Novocain, 1 grain.
Tablets Novocain 0.01 Gm with L-Suprarenin Synthetic Bitartrate 0.2 mg.
Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 1 c.c.
Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 3 c.c.
Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 5 c.c.
Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 50 mg.

Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 100 mg.
Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 120 mg.
Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 150 mg.
Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 200 mg.
Ampules Sterile Crystals, Novocain for Spinal Anesthesia, 300 mg.
Ampules Sterile Solution Novocain 20 per cent, 5 c.c.
Ampules Sterile Solution Novocain 20 per cent, with L-Suprarenin Synthetic Bitartrate, 5 c.c.
Ampules Novocain Solution 1 per cent, 2 c.c.
Ampules Novocain Solution 1 per cent with L-Suprarenin Synthetic Bitartrate, 2 c.c.
Ampules Novocain Solution 1 per cent with L-Suprarenin Synthetic Bitartrate, 6 c.c.
Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 1 c.c.
Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 3 c.c.
Novocain and L-Suprarenin Synthetic Bitartrate Hypodermic Tablets "K."
Ampules Ephedrine-Novocain Solution, 1 c.c.

Riedel-de Haen, Inc.

Nostal
Nostal Tablets, 0.1 Gm. (1½ grains).

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Liver Extract—Parke, Davis & Co.—A light brown granular powder representing a water-soluble fraction of mammalian liver, which contains the substance effective in the treatment of pernicious anemia. It is supplied in vials containing an amount of powdered extract (3 to 3.5 Gm.) obtained from 100 Gm. of fresh liver. Parke, Davis & Co., Detroit.

Liver Extract (Intramuscular)—Parke, Davis & Co.—A sterile aqueous solution, containing the nitrogenous nonprotein fraction G of Cohn et al. obtained from fresh mammalian liver. Liver Extract (Intramuscular)—Parke, Davis & Co. is used in the treatment of pernicious anemia. It is supplied in the form of 2 c.c. glaseptic ampoules, each c.c. containing the active material obtained from 5 Gm. of liver. Parke, Davis & Co., Detroit.

Undulant Fever Bacterial Vaccine.—A heat killed suspension in physiologic solution of sodium chloride of Brucella melitensis (The Journal, February 6, 1932, p. 480), var. abortus (bovine type, 50 per cent; porcine type, 50 per cent), preserved with 0.5 per cent of phenol. Each cubic centimeter contains six billion killed organisms. The product is marketed in packages of six 2 c.c. vials. Jensen-Salsbery Laboratories, Inc., Kansas City, Mo. (Jour. A. M. A., October 8, 1932, p. 1262).

Biliposol.—A complex compound of high molecular weight, the chemical structure of which has not been established, combining bismuth and a-carboxethyl b-methyl nonoic acid. It contains about 45 per cent of bismuth. Biliposol is proposed as a means of obtaining the systemic effects of bismuth in the treatment of syphilis (see Bismuth Compounds, New and Non-official Remedies, 1932, p. 100). It is marketed in 2 c.c. ampoules. Ulmer Laboratories, Minneapolis. (Jour. A. M. A., October 22, 1932, p. 1424).

Gas Gangrene Antitoxin (Combined).—An anaerobic antitoxin (New and Non-official Remedies, 1932, p. 359), prepared by immunizing horses against the toxins of B. perfringens (B. welchii) and vibrion septique. The product is marketed in packages of one syringe containing 10,000 units of perfringens antitoxin and 10,000 units of vibrion septique antitoxin. Eli Lilly & Co., Indianapolis, Ind.

Tetanus-Gas-Gangrene Antitoxin (Combined).—An anaerobic antitoxin (New and Non-official Remedies, 1932, p. 359), prepared by immunizing horses against the toxins of B. tetani, B. perfringens (B. welchii), and vibrion septique. The product is marketed in packages of one syringe containing 1,500 units of tetanus antitoxin, 1,000 units of perfringens antitoxin and 1,000 units of vibrion septique antitoxin. Eli Lilly & Co., Indianapolis, Ind.

Tuberculin Intracutaneous for Mantoux Text.—This tuberculin-Koch preparation (New and Non-official Remedies, 1932, p. 376), is marketed in packages of one intradermal syringe (single test); in packages of two intradermal syringes (double test); in packages of one 1 c.c. ampule; in packages of two 1 c.c. ampules, in packages of one 5 c.c. ampule, and in packages of two 5 c.c. ampules. The National Drug Co., Philadelphia. (Jour. A. M. A., October 29, 1932, p. 1511).

Diphtheria Toxin Diluted for Schick Test.—A diphtheria immunity test (Schick Test) preparation (New and Nonofficial Remedies, 1932, p. 395) marketed in packages of one vial containing 1 c.c. of diluted diphtheria toxin, and in packages of one vial containing 10 c.c. of diluted diphtheria toxin. Parke, Davis & Co., Detroit.

Diphtheria Toxoid.—This diphtheria toxoid preparation (New and Nonofficial Remedies, 1932, p. 382) is also marketed in hospital packages of one vial containing 30 c.c. of diphtheria toxoid. Parke, Davis & Co., Detroit. (Jour. A. M. A., November 12, 1932, p. 1691.)

Ampoules Dextrose (d-Glucose) 25 Gm., 50 c.c.—Each ampule contains dextrose (d-glucose) (New and Nonofficial Remedies, 1932, p. 262) 25 Gm., in distilled water, to make 50 c.c. Lakeside Laboratories, Inc., Milwaukee, Wis.

Solution Liver Extract (Lederle) for Oral Use.—A hydroalcoholic solution of an active principle of liver extract (Cohn's fraction G); ten c.c. containing active material obtained from 100 Gm. of liver (1 fluidounce containing the active material obtained from 10½ ounces avoirdupois). Solution liver extract (Lederle) for oral use is used in the treatment of pernicious anemia. Lederle Labobratories, Inc., Pearl River, N. Y. (Jour. A. M. A., November 26, 1932, p. 1863.)

PROPAGANDA FOR REFORM

Iodized Salt, and Goiter an Iodine Deficiency Disease.—Iodine, an essential chemical element for normal nutrition, may be insufficiently furnished by food and drink and cause simple goiter, an iodine deficiency disease. Although supplemental iodine supplied through salt or other special foods may prevent goiter that would otherwise occur or cure incipient cases, the simple administration of iodine in this manner is not a "cure-all." An "accepted" iodized salt shall contain one part of sodium or potassium iodide for each 5,000 parts of salt (approximately 150 parts of iodine per million parts of salt), or the iodine equivalent of any other suitable iodine compound. Iodized salt containing more than this quantity is considered a medicament not to be advertised to the public for table and cooking uses. (Jour. A. M. A., November 12, 1932, p. 1691.)

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All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

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Editorial

The Costs of Medical Care.

The medical profession of America should read and carefully consider the report of the Committee on the Costs of Medical Care, which recently has been made public in New York City before an assembly designated as the National Conference on the Costs of Medical Care. The medical profession in each state, county, and city, and the medical profession as individuals must weigh the evidence brought out by this committee and must decide between the two general plans: whether the recommendations of the report of the majority or of the minority shall be approved.

The need for a decision by the organized medical profession seems urgent because of the method of presenting the report to the public. The report of this committee is not made to the medical profession for its discussion, modification or adoption but is given publicity through the public press, and communities are urged to "attack the perplexing problem of providing adequate medical care for all persons at costs within their means."

Practitioners of medicine in Virginia have inherited long years of tradition in the matter of medical fees to individual patients, have borne a worthy part in serving the indigent, the poor, the "white-collar man," and the well-to-do; have served state, county and urban districts in public health and public clinic relations, and through the years, have considered first the welfare of the sick and the unfortunate. Practitioners know much, first-hand, of both economic and physical ills of the community in all classes. To no better jury than the medical profession of Virginia, it would seem, so far as the economic conditions of this section of country are concerned, should a matter of this sort be more appropriately submitted. Especially so when recommendations made involve radical changes in established practices in the remuneration for professional service. In the medical profession of no other state are ties of an established custom in such matters more firmly rooted.

It would seem, therefore, a brief statement of the work of the Committee should be made in the official publication of the Medical Society of Virginia, in order that each member may have early the recommendations of the Committee.

Conscious of an unsatisfactory condition, some fifteen leaders in the fields of medicine, public health, and social sciences came together for a conference in Washington, April of 1926. This unsatisfactory condition in America was described as the too great prevalence of diseases that should be under better control, if not blotted out. Unnecessary incidence of disease; complicating illnesses and deaths from cancer, heart disease, diabetes, syphilis and tuberculosis were evident in America; far too much focal infection existed in the people, far too much pathology was extant, and far too many crippling illnesses were current in the population of the country. It was felt that medical science had advanced to a point that all of these major disease problems could be

and should be more effectively mastered and that means more thoroughly applicable to the wider enjoyment of a higher percentage of well-being among all classes of American citizens from infancy to old age of both sexes should be sought.

It was recognized, at the same time, that vast and untold misery and pain and sickness had been lifted from the homes of the American people within the last third of a century through the more or less well ordered developments in private practice and in public health measures of the nation. It was known that tuberculosis was no longer "the Captain of the Men of Death," that typhoid fever, malaria, yellow fever, and like indigenous and perennial scourges no longer visited the homes of the American people as in years past. It was felt, however, that public health agencies should function better and that individual sickness of the American people should be more thoroughly and successfully combated and cured.

It was thought that this "unsatisfactory condition" arose through two general causes—first, the lack of a more logical and scientifically developed plan of public health organization and medical services in the nation and, second, through the excessive costs of medical care to the great bulk of the people.

This committee engaged the cooperation of certain Foundations to furnish the money ($1,000,000) in order to secure the service of a Research Staff, under a director, an executive secretary, and a field secretary, to conduct a study of this problem. A larger committee was then formed representing groups of leading workers in the private practice of medicine, in public health, in institutions and special interests, in social sciences and the public. This committee, through an executive committee, has operated under the supervision and direction of the general research staff. The final report of the five-year study, as noted below, was made at a public meeting in New York on the 30th of November last. As costs of medical care involve problems of most essential importance to medical practitioners, who form the body of professional and trained persons rendering medical service to the people of the nation, it becomes extremely necessary for doctors of medicine to take discriminating notice of the recommendations presented. Every doctor of the land should acquaint himself with the facts found by this study and should likewise inform himself as to the recommendations of the two groups—the so-called majority group report and the minority group report. The recommendations represent opinions formed by some persons not actually in the rank and file of the medical profession, by some in private practice, and by some in executive positions and in public health offices.

The personnel of the Committee was as follows:

OFFICERS

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C.-E. A. Winslow, Dr. P. H., Vice Chairman, Yale University School of Medicine, New Haven, Conn.
Winthrop W. Aldrich, Treasurer, Chase National Bank of the City of New York.
Harry H. Moore, Ph.D., Director of Study, 910 Seventeenth Street, Washington, D. C.

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Significant Facts Revealed

Among the significant facts and figures revealed in the report are the following:

1. The nation's "medical dollar" (based on data for total medical bill of $3,656,000,000 for 1929) is distributed as follows:

Physicians in private practice	29.8c
Hospitals	23.4c
Dentists	12.2c
Medicines	18.2c
Public health	3.3c
Nurses	5.5c
Cultists	3.4c
All others	4.2c
	100.0c

2. A total of 1,084,500 persons in the United States are engaged in the provision of medical care and in the sale of medical commodities, as follows:

Personnel	*Private Practice*	*Medical Institutions or Sale of Commodities*
Physicians	121,000	21,000
Dentists	56,800	5,600
Graduate Nurses	118,000	77,000
Student Nurses		80,000
Public Health and Industrial Nurses		18,800
Practical Nurses	150,000	
Midwives	47,000	
Chiropodists	4,900	
Optometrists	20,200	
Osteopaths	7,700	
Chiropractors	16,000	
Naturopaths	2,500	
Religious Healers	10,000	
Pharmacists		132,000
Lay Personnel in Hospitals, Clinics and Public Health Agencies		196,000
Total	554,100	530,400
Grand Total		1,084,500

3. The place that medical care occupies in the nation's expenditures is shown by the following table:

Fuel, gas, ice, and electricity	2,573 millions
Personal adornment	2,698 millions
Tobacco, candy, ice creams, soft drinks	3,074 millions
Education	3,388 millions
Recreation	3,420 millions
Medical Care	3,577 millions
Household furnishings and supplies	4,594 millions
Automobiles	7,882 millions
Clothing	9,315 millions
Rent	13,060 millions
Food	16,137 millions

4. Most of the money spent directly by the people for medical care goes for the treatment of illness and a very small proportion for prevention, as follows:

78.5% for care of illness
17.4% for dental care
2.7% for eye care
1.4% on prevention

5. The following comparison is given between the number of deaths due to largely preventable causes, and the number of United States soldiers killed in battle or by wounds in the World War:

Killed by the World War	50,285
Killed by tuberculosis (1930)	88,088
Killed by cancer (1930)	119,818
Infant deaths (1930)	135,845

6. The per capita expenditure in the United States for medicines is $5,49. For public health work—local, state, and federal—it is only $1.00.

7. Practitoners' incomes are distributed very unevenly, and actual incomes are inadequate for a large number of practitioners, while they are more than adequate for some others. The extent of this maldistribution is suggested by the wide interval between the middle or median net income of $3,800 and the average of $5,300. In 1929, one-third of all private practitioners had net incomes of less than $2,500. For every physician with a professional net income of more than $10,000, there were two who received less than $2,500. The contrast is especially great between general practitioners and specialists. In 1929, the 70,000 general practitioners, as a group, received less income than the 30,000 complete specialists. The average net income of the former group was under $4,000, while that of the latter was over $10,000.

8. Costs to the individual receiving medical care were likewise found to be extremely uneven. A study of 9,000 families showed that average costs of medical care varied with the incomes of these families, but that within each

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income group there were wide variations in the actual cost per family.

Of families with total annual incomes under $1,200, 80 per cent paid less than $60 during a year and 1 per cent paid over $500.

Of families with total annual incomes over $10,000, 0.7 per cent paid under $60 during a year and 74 per cent paid over $500.

Members of the Medical Society of Virginia may well study the following statement in the December 3, 1932, issue of the *Journal of the American Medical Associaiton:*

Final Report of Committee on the Costs of Medical Care

Five years of work by the fifty members and research staff of the Committee on the Costs of Medical Care have culminated in this final report, entitled "Medical Care for the American People." The majority report was favored by the following:

Private Practice—Lewellys F. Barker, M. D.; Walter P. Bowers, M. D.; J. Shelton Horsley, M. D.; Stewart R. Roberts, M. D.; Richard M. Smith, M. D.; Walter R. Steiner, M. D., and Rollin T. Woodyatt, M. D.

Institutions and Special Interests—W. Irving Clark, M. D.; William Darrach, M. D; Louis I. Dublin, Ph. D.; Elizabeth Fox, R. N.; Ambrose Hunsberger, Phar. M.; Alfred Owre, D. M. D., M. D;. W. S. Rankin, M. D.; Mary M. Roberts, R. N.; Alphonse M. Schwitalla, Ph. D., and Winford H. Smith, M. D.

Public Health—George H. Bigelow, M. D.; Herman N. Bundesen, M. D.; Haven Emerson, M. D.; John Sundwall, M. D., and C. E. A. Winslow, Dr. P. H.

Social Sciences—Michael M. Davis, Ph. D.; William T. Foster, Ph. D.; Wesley C. Mitchell, Ph. D.; William F. Ogburn, Ph. D., and Henry C. Taylor, Ph. D.

The Public—Winthrop W. Aldrich; Morris L. Cooke, D. Sc.; Mrs. William Kinnicutt Draper; Homer Folks, LL. D.; John P. Frey; Mrs. Walter McNab Miller; William J. Schieffelin, Ph. D.; Amelia Sears, and Ray Lyman Wilbur, M. D.

A summary of the majority report follows:

I

"The Committee recommends that medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists and other associated personnel. Such groups should be organized, preferably around a hospital, for rendering complete home, office and hospital care. The form of organization should encourage the maintenance of high standards and the development or preservation of a personal relation between patient and physician.

II

"The Committee recommends the extension of all basic public health services—whether provided by governmental or nongovernmental agencies—so that they will be available to the entire population according to its needs. This extension requires primarily increased financial support for official health departments and full-time trained health officers and members of their staffs whose tenure is dependent only on professional and administrative competence.

III

"The Committee recommends that the costs of medical care be placed on a group payment basis, through the use of insurance, through the use of taxation, or through the use of both these methods. This is not meant to preclude the continuation of medical service provided on an individual fee basis for those who prefer the present method. Cash benefits, i. e., compensation for wage-loss due to illness, if and when provided, should be separate and distinct from medical services.

IV

"The Committee recommends that the study, evaluation and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

V

"The Committee makes the following recommendations in the field of professional education: (A) That the training of physicians give increasing emphasis to the teaching of health and the prevention of disease; that more effective efforts be made to provide trained health officers; that the social aspects of medical practice be given greater attention; that specialties be restricted to those specially qualified; and that postgraduate educational opportunities be increased; (B) that dental students be given a broader educational background; (C) that pharmaceutical education place more stress on the pharmacist's responsibilities and opportunities for public service; (D) that nursing education be thoroughly remolded to provide well educated and well qualified registered nurses; (E) that less thoroughly trained but competent nursing aides and attendants be provided; (F) that adequate training for nurse-midwives be provided, and (G) that opportunities be offered for the systematic training of hospital and clinic administrators."

The first chapter surveys "The Present Status of Medical Care." It reports that 177,000 physicians and dentists, with some 900,000 others at an annual expense of $3,647,000,000, so distribute their services that those in the lower income groups, while suffering as much or more sickness, receive far less medical service than those with a greater income.

There is a lack of preventive health care; indeed, "niggardly appropriations for public health work." The burden of sickness cannot be measured by averages, because of the extreme unevenness with which it is distributed. Fifty per cent of the families in the United States have incomes of less than $2,000, which means that "even less-than-average charges for medical service, therefore, are more than many of our families can bear."

One conclusion reads: "*Certainly no solution to the problems of medical costs can be reached through a reduction in the average of professional incomes*" (italics in original). This average is none too high now to attract a high type of practitioners and permit progress through graduate training and study.

The Committee attempts from the report of some of these investigations to calculate the cost of complete medical care and concludes that "all needed medical care of the kind which people customarily purchase individually could be provided in urban regions at least, at a cost, excluding capital charges, of $20 to $40 per capita per annum."

The second chapter discusses "The Essentials of a Satisfactory Medical Program." Six basic essentials are enumerated:

"1. The plan must safeguard the quality of medical service and preserve the essential personal relationship between patient and physician.

"2. It must provide for the future development of preventive and curative services in such kinds and amounts as will meet the needs of substantially

all the people and not merely their present effective demands.

"3. It must provide services on financial terms which the people can and will meet, without undue hardship, through either individual or collective resources.

"4. There should be a full application of existing knowledge to the prevention of disease, so that all medical practice will be permeated with the concept of prevention. The program must include, therefore, not only medical care of the individual and the family but also a well organized and adequately supported public health program [1]

"5. The basic plan should include provisions for assisting and guiding patients in the selection of competent practitioners and suitable facilities for medical care.

"6. Adequate and assured payment must be provided to the individuals and agencies which furnish the care."

Having set up these standards, the Majority Report selects three lines of approach to the solution of its problem:

"(a) The development of types of organized or group practice that will more effectively and economically meet the community's medical needs.

"(b) The distribution, over a period of time and over a group of families or individuals, of the costs of service.

"(c) Provision for the planning and coordination, on a local and regional basis, of all health and medical services."

It is evident that the program of the Majority Report centers around "provision of service through organized groups." The groups studied on which conclusions are based covered only fifty such groups; conclusions as to the financial operation of such clinics and especially as to their net and gross income are based on the information furnished by twenty-seven such clinics.

The Majority Report sets up "standards" for group practice and among these emphasizes the statement that "*lay groups organized for profit have no legitimate place in the provision of this vital public service*" (italics in original). This standard, the Committee seems to fail to note, would eliminate many of the examples of group practice on which it depends for the argument previously mentioned leading to the estimate of annual cost.

"Inevitably the Committee has been led to the conclusion that the costs of medical care should be distributed over groups of people and over periods of time." This leads to the adoption of insurance as a major recommendation. The participation of insurance companies is rejected and taxation accepted only in a secondary form. Having eliminated these, the Majority Report is brought to the somewhat indefinite conclusions that "there should, therefore, be an agency in each community through which the lay and the professional groups concerned in providing and financing medical services could consult, plan and act in behalf of the best provision of medical resources which the community can afford." The character of this "agency" remains indefinite throughout the report.

Chapter three sets up "An Ultimate Objective in the Organization of Medicine." "The keystone of the concept of a satisfactory medical service for the nation is the development of one or more non-profit 'community medical centers' in every city of approximately 15,000 population or more." Then follows a description of such an imaginary center. The Majority Report passes lightly over such questions as the possibility of the redistribution of great medical centers that have been established in most large cities for educational, political, financial or other purposes which render them ill adjusted to fit into such a program.

It assumes that existing hospital organizations can be so transformed but offers little information as to the methods by which this change may be brought about. There is much talk of "coordination and control of services" but there is no definite statement as to what is to constitute this important factor in the program.

Chapter four considers "Plans and Experiments Now Under Way" and lists twenty-five such experiments. Four of these are "under professional sponsorship"; four "under consumer sponsorship"; thirteen are listed as "under community sponsorship with professional participation"; one "under joint sponsorship of professional and consumer groups," and three "under commercial sponsorship." All of these are treated without the specific criticisms necessary to inspection of the foundation stones on which the structure of the national medical service is to be erected.

The Committee concludes that:

"These twenty-five types of development in the United States and the many developments abroad show a ferment at work in medical practice which contains great possibilities for good and evil. The Committee is aware of the fact that some of the plans are mere attempts to capitalize for private gain the people's needs for better medical service. It is equally aware of the dangers inherent in other plans. Each should be viewed as an experiment and subjected to the careful evaluation that is given in a scientific laboratory. Some of them appear to the Committee to be very promising."

The fifth chapter includes "The Recommendations of the Committee" previously here quoted. The somewhat vague character of the report is excused by the statement that "the committee believes that its obligations require it to think ahead for twenty or thirty years, as well as for the next five or ten years and to present distant as well as immediate goals."

The Committee's first recommendation that medical service "should be furnished largely by organized groups of physicians, dentists" and so on does not take account of the fact that these groups are already professionally organized in their own associations. Indeed, the existence of these professional associations is almost entirely ignored in the Majority Report.

"The Committee's most fundamental specific proposal is the development of suitable hospitals into comprehensive community medical centers."

Industrial medical service is cited as another step toward the realization of this recommendation, and the Majority Report suggests "that free choice of practitioners should be allowed insofar as practicable."

University medical service is also to be fitted into this scheme. "In 'College towns' it may frequently be feasible to expand the university medical service into a community medical center which serves townspeople as well as students."

The Majority Report recognizes the necessity of measures to maintain the quality of medical service in groups; no recommendations are made concerning relationships with professional associations, the most important bodies for maintaining standards.

The recommendation which will undoubtedly at-

[1] The term "public health program" is meant to include the work of the official health departments and of voluntary health agencies.

tract the most attention is that "the costs of medical care be placed on a group payment basis, through the use of insurance." The discussion is extremely indefinite. The comments interspersed clearly reflect sharp divisions of opinion in the Committee.

It is suggested that "a state medical society might initiate and standardize the organization of group practice in local areas and serve as a negotiating or mediating body in making the arrangements for group payment." On the whole, however, the Majority Report seems to incline to a voluntary insurance scheme with subsidies from taxation.

There is also the conclusion that making "individual practice and not group practice the logical foundation of the whole system . . . has been one of the chief disadvantages which European countries have faced under compulsory insurance." Examples or evidence in support of this conclusion are not made available.

The Majority Report persistently emphasizes the importance of groups; it looks on insurance "as the most effective possible stimulant to the formation of such groups." It is hard to determine whether the groups are to be the basis or the objective of the program.

Confronted with the problem of the "control of competition," which has hitherto evidently produced deterioration in most of the schemes of contract practice which are discussed, the Majority Report proposes the following devices for its control:

"(a) Provision of medical service in increasing proportions by organized non-profit groups with community backing and control.

"(b) State regulation of the finances to assure actuarial soundness.

"(c) The formulation of general standards and policies, the regulation of charges, and the arbitration of difficulties by the state medical and dental societies or by an officially appointed medical board nominated in large part by the societies."

The Majority Report urges a study by professional groups with lay participants as a preliminary to the installation of any program.

In the final chapter, "The Challenge of the Future," appears recognition of the place of such professional associations. The report says:

"The cooperation of the professional groups in community or state leadership is essential. Their stake in these issues is very large; their interest is continuing. They should instigate as well as guide. The crucial point in the generalship of the forces at work is, perhaps, the development of a proper relation between the professional and the lay groups. The public should recognize the central place of the professional groups in determining standards and methods. The professions should recognize their ultimate responsibilities to the public. The control of undesirable commercial enterprises in this field will depend largely on the watchfulness of the professional bodies, on their ability to enlist lay cooperation, and on the development of sound and successfully operating and non-commercial plans.

"Continued study of the complex problems of medical economics is of the first importance. The Committee's investigations have opened a way. Fortunately, professional societies are establishing bureaus and committees on medical economics. Because a university has the unique advantage of having both medical and social scientists in one organization, the Committee has formally recommended to the universities of the country that they conduct research in this field."

Minority Reports

Two minority reports and two statements, constitute the views of those members of the committee who found themselves in conflict with the general tone or trend of the majority report.

First Minority Report

The first minority report, which was signed by A. Christie, M. D.; George E. Follansbee, M. D., M. L. Harris, M. D., Kirby S. Howlett, M. D., A. C. Morgan, M. D., Olin West, M. D., Robert Wilson, M. D., and N. B. Van Etten, M. D., draws attention to the failure of the Committee to show by facts that "organization" can accomplish what is claimed for it in the majority report. There is nothing in the experience of the medical profession to show that the "Community Medical Center" is a workable scheme or that it would not contain evils of its own which might be worse than the evils it is supposed to alleviate. This Medical Center Plan is suggestive of the great mergers in industry in which mass production and centralized control are the principal features. It apparently disregards the fundamentals which make medicine a personal service and which require that the individual patient and not diseases or economic classes or groups be the object of medical care.

The objections to the Medical Center Plan are summarized as follows:

1. It would establish a medical hierarchy in every community to dictate who might practice medicine there.

2. It would be impossible to prevent competition among the many such centers necessary for large cities; cost would inevitably be increased by the organization necessary to assign patients to the various centers. This would add to the evils of medical dictatorship those of a new bureau in the local government with its attendant cost.

3. Continuous personal relationship of physician and patient would be difficult if not impossible under such conditions.

In the opinion of this minority group, the question of "Industrial Medical Service" has not been adequately or fairly dealt with in the majority report. For each of the favorable reports published (publications Nos. 5, 18 and 20) many instances could be cited wherein the results of industrial medical services have been exceedingly unfavorable. It is pointed out that in industrial medical services, mutual benefit associations, so-called health and hospital associations, and other forms of contract practice, no means have been found to prevent destructive competition between individuals or groups concerned with these movements. The studies published by the Committee show only the favorable aspects. They were selected because they were considered the most favorable examples of this type of practice in the United States. For each of these plans a score of the opposite kind can be found.

Utilization of subsidiary personnel is nothing new in medical practice. Already there is constant temptation in many fields to permit technicians to perform duties entirely unjustified by their knowledge and training. The minority expresses a word of caution relative to the dangers involved in permitting non-medical technicians to assume the duties which only physicians should undertake.

The Committee's first recommendation that medical service "should be furnished largely by organized groups of physicians, dentists" and so on, is apparently predicated on the Committee's study on "Private Group Clinics." This minority group believes that the establishment of such clinics is in line of

progress when they are a natural outgrowth of local conditions, but the studies published by the Committee, in the opinion of the minority, were far too few in number to constitute a safe base on which to erect so large and revolutionary a structure as is proposed. The majority report fails to consider the fact that multiplication of clinics or groups in large communities results in duplication of expensive equipment far beyond the needs of the community. Such a multiplication of medical facilities, instead of reducing overhead and the costs of medical care to the community, adds to this cost through the duplication of plants. It is significant to note that the overhead in private medical practice averages only about 2 per cent higher than for medical groups in the lower brackets of gross income. As the gross income rises, the ratio of overhead becomes progressively less significant.

Other disadvantages of group practice are restriction of freedom of action in respect to vacations, study, travel, attendance on scientific meetings and even publications of medical articles to all members except the heads of the group; comparatively static income of members of a group except that of the owner or owners; salary cuts, then discharge of employees to reduce overhead in times of depression; disruption of groups through death or disability of some able man or men around whom the group has been built, and the difficulty with which physicians are able to find employment in another group or are able to enter private practice when a group closes.

In spite of the extensive data available on the insurance systems of Europe and the evidence which can be produced to show that voluntary health insurance schemes have everywhere failed, the majority of the Committee makes the definite recommendation that this country adopt the thoroughly discredited method of voluntary insurance A system of voluntary health insurance tied to the visionary medical center plan, which is offered as the "keystone" of all medical service, would plunge the medical profession into similar or more difficult problems than have been experienced by the European profession in its struggle against the various European insurance schemes. In the United States, contract practice is essentially health insurance and has already given rise to destructive competition among professional groups, inferior medical service, loss of personal relationship of patient and physicians, and demoralization of the profession. It is clear that all such schemes are contrary to sound public policy and that the shortest road to commercialism of the practice of medicine is through the supposedly rosy path of insurance.

The objections to compulsory health insurance are almost as compelling to this minority group as are those to voluntary insurance. Proof of the evils of the compulsory system is at hand in our own experience in this country with the only compulsory system with which we have yet had to deal, workmen's compensation insurance. Under workmen's compensation, groups are soliciting contracts, often through paid lay promoters; laymen are organizing clinics and hiring doctors to do the work; standards of practice are being lowered; able physicians outside the groups are being pushed to the wall; the patient is forced by his employer to go to a certain clinic, and the physician is largely under the control of the insurance companies. These are not visionary fears of what may happen but a true picture of widespread evils attending insurance practice. No better example should be needed of what must happen to medical care if compulsory insurance is extended to families.

The total cost of medical care is unusually increased when it is paid for through insurance, because the cost of operation of the insurance plan must be added to the cost of medical care and the number of persons sick and the number of days' sickness per capita always increase under any insurance system. The Majority Report registers approval of insurance but disapproves of insurance companies. The minority group agrees with the principle that, in any contract practice plan involving an insurance principle, this principle should be applied through a nonprofit organization. The minority group has not attempted to marshal all the facts or arguments that can be used against health insurance, but has endeavored to show that there are great dangers and evils in insurance practice which must be set over against the advantages of distributing the costs of medical care by this method. The minority group believes that the majority report has minimized these dangers and evils.

The minority recommendations follow:

"I. The minority recommends that government competition in the practice of medicine be discontinued and that its activities be restricted (a) to the care of the indigent and of those patients with diseases which can be cared for only in governmental institutions; (b) to the promotion of public health; (c) to the support of the medical departments of the Army and Navy, Coast and Geodetic Survey, and other government services which cannot because of their nature or location be served by the general medical profession; and (d) to the care of veterans suffering from bona fide service-connected disabilities and diseases, except in the case of tuberculosis and nervous and mental diseases.

"II. The minority recommends that government care of the indigent be expanded with the ultimate object of relieving the medical profession of this burden.

"III. The minority joins with the Committee in recommending that the study, evaluation and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

"IV. The minority recommends that united attempts be made to restore the general practitioner to the central place in medical practice.

"V. The minority recommends that the corporate practice of medicine, financed through intermediary agencies, be vigorously and persistently opposed as being economically wasteful, inimical to a continued and sustained high quality of medical care, or unfair exploitation of the medical profession.

"VI. The minority recommends that methods be given careful trial which can rightly be fitted into our present institutions and agencies without interfering with the fundamentals of medical practice.

"VII. The minority recommends the development by state or county medical societies of plans for medical care."

Safeguards in Distribution of Medical Costs

This minority group agrees that any plan for the distribution of medical costs must have the following safeguards:

1. It must be under the control of the medical profession. (A "Grievance Board" to settle disputes, having lay representation, is permissible and desirable.)

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2. It must guarantee not only nominal but actual free choice of physician.
3. It must include all, or a large majority of, the members of the county medical society.
4. The funds must be administered on a nonprofit basis.
5. It should provide for direct payment by the patient of a certain minimum amount, the common fund providing only that portion beyond the patient's means.
6. It should make adequate provision for community care of the indigent.
7. It must be entirely separate from any plan providing for cash benefits.

COUNTY SOCIETY PLANS FOR MEDICAL CARE

The minority group states its reasons for favoring thorough trial of the county society plan for furnishing complete medical care as follows:
1. It places responsibility for the medical care of the entire community on the organized physicians of the community.
2. It places medical care under the control of the organized profession instead of in the hands of lay corporations, insurance companies, and so on.
3. It places responsibility for the quality of service directly on the organized profession. It is in fact the only plan that guarantees quality of service and makes it the only basis of competition.
4. It removes the possibility of unethical competition because it includes all the physicians of the community and fixes a fee schedule.
5. Solicitation of patents, underbidding for contracts and other evils of the usual insurance plans are eliminated.
6. Freedom of choice of physician is assured and the essential personal relationship of physician and patient is thereby preserved.
7. It is the only plan that includes all classes, from the indigent to the wealthy.
8. It is adaptable to every locality, both urban and rural.
9. It provides for a minimum cost of administration by operating on a nonprofit basis.
10. It provides for payment, by every patient with income, of a certain minimum amount before the insurance is in operation. The minimum rises with the patient's income. This provision alone will operate to avoid many abuses in all other types of insurance practice
11. It provides for means of certification of disability separate from the attending physician.
12. Cash benefits do not form a part of the plan.

Second Minority Report

The second minority report, which was signed by Herbert E. Phillips, D. D. S., and C. E. Rudolph, D. D. S., is in agreement with the first minority report in strongly emphasizing the necessity of maintaining professional standards and the position of the general practitioner. This group agrees with the first minority group that the majority is unduly critical of the professions. The second minority group joins with the first in declaring the medical center plan of the majority a utopian concept involving many problems too visionary or problematic to justify inclusion in an authoritative report of this kind.

The second minority group believe that the method of payment for medical service need not interfere with the highest professional standard or the close personal relations between practitioner and patient. Furthermore, this group is of the opinion that the introduction of compulsory health insurance under professional control would eliminate the objectionable features. It is in accord with the first minority group on the development by state or county medical society of plans for medical care.

The statements of Edgar Sydenstricker and Walton H. Hamilton are largely criticisms of the methods used by the Committee. They are of the opinion that the preliminary studies and the recommendation do not deal adequately with the fundamental economic questions which the Committee was formed primarily to study and consider.

President's Message

Report of Committee on Costs of Medical Care Should be Considered.

The Final Report of the Committee on the Costs of Medical Care is receiving widespread publicity from the Press. Editorial comment from this source, as well as by the official publications of organized medicine, plainly indicates the importance attributed to this Report, both by the public and by the medical profession.

When the full text of the studies upon which the conclusions of the Committee have been based are available for analysis, the Report will receive consideration by our Special Committee on Public Relations—State and County. This Committee of the Society was established for the express purpose of initiating studies and recommending to the Society suggested policies in this particular field. It may be assumed, therefore, that the State Organization in Virginia will be fully alive to its duties and responsibilities and that these will be met in an orderly fashion and in the manner proscribed by the Society.

There is reason to believe that county and other local societies in association with local civic organizations will be asked in the near future for suggested plans by which certain recommendations of the Majority Report may be put in operation. It is, therefore, of prime importance that every member of the Medical Society of Virginia inform himself as fully as possible upon the facts and recommendations discussed in the Final Report. It is here sug-

gested that local societies secure sufficient copies of the Final Report for circulation among their members.

Few of us who have read a summary of the Majority Report have failed to be surprised and perhaps astounded at the sweeping character and far-reaching scope of its recommendations and possible implications. Unquestionably the Report challenges the existing order in medicine in that it has failed both from the viewpoint of the public and of medical practice to adapt itself to the economic and social demands of a changing civilization. To be sure this is not an unfamiliar indictment—finance, commerce, government, legal procedure and practically all present-day institutions are being similarly assailed from one quarter or another. Whether medicine is more conspicuously out of joint with the times than other institutions is a fair question. Granted that it is not the chief offender, this fact alone will not be satisfying to the expectations and demands of a public long accustomed to the attitude and service of a profession whose sole aim is the good of society. It is hardly conceivable that the best interest of the public will ever require an economic order ultimately inimical to the highest development of medical practice and medical science.

Experience in some other countries warrants the belief, however, that ill-advised changes forced by public opinion have brought real harm. In the present instance the public should, and doubtless will, look to the medical profession for enlightened leadership and sound advice in weighing the recommendations of the Committee on the Costs of Medical Care. Let us not sacrifice this extremely important strategic position. Hasty accusation of personal bias on the one hand or of bureaucratic methods on the other cannot be expected to react favorably upon a thinking public.

Whatever our first impressions may be, it would certainly seem the part of wisdom to study carefully the full Report of the Committee. The Report contains a mass of information bearing on the conclusions arrived at, not available elsewhere. Among the signers of the Majority Report are practitioners of medicine whose opinions at least deserve our thoughtful consideration. It is highly expedient that unity of thought and action should be attained—and let us sincerely hope that it can be—but it is absolutely essential that we be right.

J. C. Flippin, M. D., *President*,
Medical Society of Virginia.

Dr. Flippin has appointed the following Special Committees to serve for the year ending with our 1933 meeting:

Special Committees

Walter Reed Commission—Chairman, Dr. C. P. Jones; Dr. J. D. Clements, Dr. J. W. Hunter.

Maternal Welfare—Chairman, Dr. P. W. Miles; Dr. Greer Baughman, Dr. F. O. Plunkett, Dr. T. J. Williams, Dr. W. R. Payne.

History of Medicine in Virginia—Chairman, Dr. W. B. Blanton; Dr. B. R. Tucker, Dr. F. C. Rinker.

Child Welfare—Chairman, Dr. W. P. Jackson; Dr. T. H. Daniel, Dr. W. A. McGee, Dr. W. W. Wilkinson, Dr. C. E. Conrad, Dr. A. T. Finch.

Anesthetists and Laboratory Technicians—Chairman, Dr. L. C. Pusch; Dr. W. E. Bray, Dr. I. H. Goldman, Dr. H. H. Trout.

Department of Clinical Education—Chairman, Dr. R. D. Bates; Executive Secretary, Mr. George W. Eutsler; Dr. W. F. Draper, Dr. R. A. Moore, Dr. H. S. Daniel, Dr. L. T. Royster, Dr. Manfred Call, and Advisory Board, composed of Committee on Scientific Work and Clinics and Committee on Medical Education and Hospitals.

Group Societies—Chairman, Dr. W. B. McIlwaine, Dr. D. M. Kipps, Dr. E. L. Kendig.

Public Relations—State and County—Chairman, Dr. A. F. Robertson; Dr. M. B. Hiden, Dr. Herbert C. Jones, Dr. J. Shelton Horsley, Dr. W. B. Martin, Dr. I. C. Harrison.

Military Affairs and National Defense—Chairman, Dr. H. F. White, Dr. B. S. Yancey, Dr. Bernard Kyle.

Tuberculosis Clinics—Chairman, Dr. Dean B. Cole; Dr. H. A. Latane, Dr. S. E. Hughes, Dr. W. E. Brown, Dr. M. B. Jarman.

Mental Hygiene—Chairman, Dr. F. H. Redwood; Dr. J. H. Royster, Dr. D. C. Wilson, Dr. James P. King.

Advisory Board to Woman's Auxiliary—Chairman, Dr. J. Allison Hodges; Dr. Southgate Leigh, Dr. Lee E. Sutton.

To Make Inquiry as to Effect of Using Iodized Salt—Chairman, Dr. W. H. Higgins; Dr. N. G. Wilson, Dr. H. B. Mulholland.

To Administer Trust Fund for Post-Graduate Clinical Education—Last five living past presidents—Dr. J. Shelton Horsley, Dr. J. W. Preston, Dr. J. Bolling Jones, Dr. J. Allison Hodges, Dr. I. C. Harrison.

The New Year is here. We hope it may be a full twelve months of happiness, health and good luck for all.

XUM

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Notice to the Component Societies.

The Department of Clinical Education will be glad to arrange for speakers to make addresses to any Society or group of doctors, on any subject desired. A list of attractive speakers is available, and requests for speakers or any information relative to them may be made to Mr. Geo. W. Eutsler, Secretary of Department, Box 1487, University, Va., or to the Chairman. We earnestly desire to cooperate with the Virginia doctors in carrying on this great work.

The success of the courses in Prenatal and Postnatal Care, given by Dr. Lapham, has encouraged us to feel that this work is going to be popular, and we believe it is going to be worthwhile to say that one has had the advantage of these courses.

In line with this effort to give post-graduate instruction, it may be well to consider the changes contemplated in some quarters, as to the methods of Medical Practice. I would call your attention to the Majority report of the committee on the Costs of Medical Care in the *Journal of the American Medical Association* for December 3, 1932, also the Minority report, and the very able comment by the Editor of that Journal.

I believe the time has come for the Medical Profession to wake up and get busy, unless it views with complacency the upsetting of the old order of medical practice, and the substitution of a Socialistic or Communistic method of administering Medical Care.

Listen! Read! Think! and get ready to meet this question.

There will be a meeting of the Department of Clinical Education in January, probably just about the time of the mid-winter meeting of the Council. Members of the Department will be advised of the date later.

R. D. Bates, M. D.,
Chairman, Department of Clinical Education.

New Devices for Post-Graduate Education.

Reports of two committees at the Richmond meeting of the Medical Society of Virginia indicated means that should be more highly developed for more effective educational results. The Standing Committee on Medical Education and Hospitals commended the excellent programs now being offered by component societies in most sections of the State and inquired "if it might not with advantage be made a more universal custom that the office of the Secretary of Clinical Education be authorized to send out postcard invitations to members of the State Society residing in the adjoining councilor districts, or at least to those resident in the counties immediately adjoining the councilor district in which the meetings may be held." If, as the Committee seems to feel, such invitations would prove a stimulus to other societies to maintain their standards, doubtless the Department of Clinical Education at its next meeting will take some action toward expanding and perfecting the activities of this kind it has engaged in at the request of a few societies.

The report of the Library Committee, supplemented by an announcement in the section of News Notes in the Medical Monthly, explaining that the facilities of three medical libraries are offered to the members of the Medical Society seems to place upon the Department of Clinical Education the responsibility of devising effective means for popularizing these services. It is difficult at best to follow special study or courses of reading at a distance from the source of supply, and the handicap of the borrower by mail should be removed if possible by making it easier to obey that impulse.

Another Step Towards Pediatrics Courses.

Through its Committee on Child Welfare, several members of the Virginia Pediatric Society have volunteered to give their services for three days' teaching in the spring, if groups of physicians desiring a course in that subject can be organized. Cooperation between the Pediatric Society, which for its part will undertake to outline a suitable course and furnish qualified instructors, and the Department of Clinical Education, which will exercise its good offices in the organization of classes where they are desired, may mean by the coming of spring a possible offering of a distinct educa-

tional opportunity. Details of the proposals already advanced are being shaped in a program to be submitted to the Department of Clinical Education at its next meeting, perhaps in January.

GEO. W. EUTSLER, *Executive Secretary, Department of Clinical Education.*

The Half-Way Mark in Dr. Lapham's Courses in the Southwest.

With the completion of five meetings of the courses in prenatal and postnatal care in Wytheville, Galax, Roanoke, Christiansburg and Pulaski conducted by Dr. Maxwell E. Lapham, Field Clinician of the Joint Committee on Prenatal and Postnatal Instruction, the enrollment has remained at a total of fifty-one. But additional visitors have come into them among whom, for the Galax class, are Drs. E. C. Elliott, J. C. Moxley and H. T. Smith, and for the Roanoke class, Drs. J. C. Robertson and N. M. Robinson. The average attendance for the classes has been 46.4 each week, while the percentage of attendance for the enrolled members is 79.6, a slightly higher rate than for any previous circuit.

The Joint Committee has been able to secure for Dr. Lapham a standard manikin and doll. The purchase of this useful equipment was entered upon after it had been requested by many members of previous classes and after experiments with borrowed materials. In the first stages of its use the equipment seems to be giving the satisfaction that was expected.

Plans for the Fourth Circuit.

Dr. Joseph D. Collins, President of the Norfolk County Medical Society, has appointed Dr. E. W. Rawls, of Portsmouth, to the chairmanship of the committee to have charge of the organization and conduct of the class in prenatal and postnatal care in that city. The course will begin in the last week of January.

The committee in charge of the Norfolk class—Dr. C. J. Andrews, Chairman, and Drs. H. W. Rogers, M. B. Savage, Wallace Spigel and T. N. Vorbrinck—has mapped out a series of letters of information and invitation to the doctors of Norfolk and vicinity.

Definite enrollments for the fourth circuit include those of thirteen Negro physicians of Norfolk and Portsmouth for whom the Joint Committee wishes to organize a class if Dr. Lapham's schedule permits. The colored physicians already enrolled are: Drs. D. W. Byrd, E. D. Burke, J. T. Cannaday, C. R. S. Collins, A. C. Fentress, G. Hamilton Francis, U. S. G. Jones, S. F. Moore, E. W. Murray, J. L. Sapp, A. J. Strong, F. R. Trigg and J. Q. A. Webb.

Two Weeks' Course in Bedford County.

Dr. T. P. West, President of the Bedford County Medical Society, has been instrumental in furthering the formation of a class in Bedford. The physicians of that large county, inconveniently located in respect to the prenatal and postnatal study groups in Lynchburg and Roanoke, have applied for Dr. Lapham's services in an intensive course of two weeks. The tentative plan is for the course to be held April 10th-21st. The enrollments already secured by Dr. West for the Bedford course are those of Drs. R. A. Bennett, C. H. Bondurant, E. L. Johnson, W. O. McCabe, B. A. Rice, M. P. Rucker, T. P. West and G. L. A. Pogue.

GEO. W. EUTSLER, *Secretary, Joint Committee.*

Proceedings of Societies

The Lynchburg Academy of Medicine, Inc.,

At its meeting on the night of December 5th, at the Virginian Hotel, Lynchburg, elected the following officers for the coming year: President, Dr. Sam Wilson; vice-president, Dr. R. D. Caldwell; secretary-treasurer. Dr. John Hundley, Jr., all of Lynchburg. The retiring officers are Drs. D. P. Scott and Ernest G. Scott, as president and secretary, respectively.

A motion was passed at this meeting, inviting the Medical Society of Virginia to hold its next meeting in Lynchburg. This invitation is to be transmitted to the Council at its winter meeting.

The Fauquier County Medical Society

Met at Manassas, Va., December 1, 1932, with Dr. Stewart McBryde, Vice-President of the Society as host. The doctors, dentists and druggists of Prince William, Fauquier, Culpeper, Rappahannock, Loudoun, Fairfax and Arlington Counties, also a number of promi-

nent men in the profession from the cities of Washington, Alexandria, and Fredericksburg were invited to this meeting. There were seventy-five present.

Dr. John T. Sprague, President of the Society presided. A speech of welcome was made by Dr. Stewart McBryde with Dr. Sprague replying. At the business session which followed, Dr. Charles B. Martin, of Nokesville, and Dr. Benjamin Phillips, of Quantico, were elected to membership.

The guest speaker was Major General Robert U. Patterson, the present Surgeon-General of the United States Army. He spoke on Veterans' Benefits, gave a most interesting history of the office of Surgeon-General since the days of George Washington, and paid high tribute to the following men, all officers of the United States Army, and all well known throughout the world: Surgeon-General George M. Sternberg, William C. Gorgas, Thomas Letterman, Walter Reed, Fred F. Russell, and Carlos Findley. General Patterson's speech was discussed by Drs. John T. Sprague, S. T. Noland, W. O. Bailey, and M. B. Hiden.

The meeting then adjourned and was followed by refreshments, including an excellent supper. Music was furnished by Dr. McBryde, and there was singing and dancing after supper.

Dr. M. B. Hiden, Warrenton, is secretary of this Society.

Roanoke Academy of Medicine.

The first hospital meeting of the Roanoke Academy of Medicine for the current year was held at Jefferson Hospital, Roanoke, on Monday evening, December 5th. The following program was presented by members of the hospital staff:

Skin Grafting—Dr. Frank G. Slaughter.
Club Feet—Dr. Roy M. Hoover.
Glandular Fever—Dr. J. R Perdue.
Occiput Posterior—Dr. A. M. Groseclose.
X-Ray Diagnosis of Gastric and Duodenal Ulcer—Dr. C. H. Peterson.
Surgical Treatment of Gastric and Duodenal Ulcer—Dr. Hugh H. Trout.
Medical Treatment of Gastric and Duodenal Ulcer—Dr. George B. Lawson.

Dr. C. H. Bondurant, of Bedford, was elected to membership.

The next regular meeting of the Academy is to be on Monday evening, January 2nd.

James City-New Kent County Medical Society.

There was a meeting of this Society on December 1st, at the Wayside Inn, Toano, Va., at which time a delightful supper was served. Dr. H. U. Stephenson, of Richmond, was the guest of the Society. Dr. T. B. Henderson, of Williamsburg, read an article from the *Literary Digest* on "California's Plan for Lowering Medical Costs." This was discussed by the members.

Dr. A. M. Sneed made a motion, seconded by Dr. E. B. Kilby, that the Society hereafter have one member at each meeting to read an article or discuss a case report.

Dr. J. R. Parker suggested that the Society arrange for one of the pre-natal and post-natal clinics, to be held in the county next year.

There being no further business, the meeting adjourned.

J. R. Tucker, *Secretary.*

Richmond Academy of Medicine.

At the meeting of the Academy of Medicine, on December the 13th, Dr. Charles P. Howze, Washington, D. C., and Dr. Chas. C. Haskell, East Orange, N. J., both formerly located in Virginia, presented papers by invitation. At the annual election of officers which followed, Dr. Carrington Williams was elected president for the ensuing year. Other officers elected at this time were Dr. Turner S. Shelton and Dr. Powell Williams, as vice-presidents, and Dr. Thomas D. Jones, as secretary-treasurer. All are of Richmond.

News Notes

Greetings for the New Year!
May it be One of Happiness for You and Yours

"Medical Care for the American People"

Is the title of the final report of the Committee on the Costs of Medical Care. It is based on five years of intensive study, and contains the Committee's final recommendations. It should be of interest to people in all walks of life and especially to physicians and those of similar interests. The Editorial Department of this issue of the Monthly and the President's Message are given over to a dis-

cussion of this subject. The book named above may be had from your bookstore for $1.50 or for $1.60 postpaid from the publishers, The University of Chicago Press, 5750 Ellis Avenue, Chicago, Ill.

The Seaboard Medical Association of Virginia and North Carolina

Held its annual meeting at Rocky Mount, N. C., December 6th, 7th and 8th, under the presidency of Dr. Edmund S. Boice, of that place. There was a large attendance and entertainments were delightful. In addition to a large number of volunteer papers, there was a most interesting symposium on pneumonia, a contribution from members of the faculty of Duke University, Medical School. In connection with this, there were exhibited a large number of gross specimens of lung, heart, and other viscera, as well as hundreds of lantern slides. The Association conferred a fellowship on Dr. Wiley D. Forbus, of the Duke Medical School, who took part in the symposium.

A beautiful memorial service was held in memory of members who had died since the last meeting. Among those passing were several ex-presidents: Drs. Junius F. Lynch, E. C. S. Taliaferro, George A. Caton, and Albert Anderson. Others who died during the year were Drs. Charles R. Grandy, J. B. Abbitt, E. D. Hunter, Mark W. Peyser, and J. M. Hodges.

Officers elected for the ensuing year are: President, Dr. Walter B. Martin, Norfolk, Va.; Vice-Presidents, Drs. W. Bernard Kinlaw, Rocky Mount, N. C.; Oscar R. Yates, Suffolk, Va.; John C. Tayloe, Washington, N. C.; and Robert Matthews, Norfolk, Va.; Drs. A. M. Burfoot, Fentress, Va., and Clarence Porter Jones, Newport News, Va., were re-elected treasurer and secretary, respectively. This will make the twenty-second consecutive year for Dr. Jones in this office. It was voted to hold the 1933 meeting next December in Norfolk, Va.

The Richmond (Va.) Ophthalmological and Oto-Laryngological Society,

At its annual meeting, held the middle of December, elected the following officers for the ensuing year: President, Dr. R. W. Vaughan; vice-president, Dr. Geo. H. Snead, and secretary-treasurer, Dr. W. R. Weisiger, the retiring president and former secretary. This Society is composed of eye, ear, nose and throat specialists of this city and holds monthly meetings for the discussion of scientific matters.

Dr. Clifton R. Titus,

Of the class of '31, Medical College of Virginia, and for a short time located at Lucketts, Va., is now established at Bassetts, Va., where he is engaged in the general practice of medicine and is associated with the Stanley Furniture Company of Stanleytown, Va.

Dr. W. P. Parrish,

Chatham, Va., recently a patient at Memorial Hospital, Danville, has returned home much improved.

Dr. F. A. Sinclair,

Newport News, Va., was elected president of the Tidewater Fox Hunters' Association, at its annual meeting the last of November. He and Dr. A. M. Sneed, of Toano, Va., were also named as two of the directors of the Association.

News Notes From Medical College of Virginia.

The Medical College of Virginia observed Founders' Day at noon Thursday, December first, by an academic procession and an address by Dr. Ray Lyman Wilbur, Secretary of the Interior, and president of Leland Stanford University on leave. At the exercises held at Monumental Church, Dr. E. C. L. Miller, directing librarian, read a brief paper on the scope and activities of the library and invited the profession to use the facilities of the library, both in person and by mail. During the afternoon and evening, the new library building was open to visitors and tea was served from four to six by the wives of the staff of the College.

Dr. W. G. Crockett of the school of pharmacy attended the annual meeting of the National Druggists in Washington on December 14th.

Dr. Harry Bear, dean of the school of dentistry, was a recent guest of the New Haven Dental Association, at its annual meeting. Dr. Bear read a paper on the principles of exodontia and while in New Haven visited Yale University dental school.

The board room of the new library building where meetings of the faculty and board of visitors are held is to be known as "The

Founders Room." Plans are under way to assemble in this room the portraits of the six founders of the college as well as articles and instruments used by them. It is also planned to place in this room instruments, books, and other articles of professional and personal interest belonging to physicians of an older day whose names are associated with the College. The College is so rich in history that every effort is being made to collect everything of either professional or personal interest belonging to early members of the faculty, in order to preserve them for future generations. The College will soon celebrate its one hundredth anniversary and it is hoped by that time the collection in its library will be a museum of special interest to the profession.

The work of the out-patient department continues to break all previous records for service. During the month of November 5,082 patients were handled, which is an increase of 650 over the same month of 1931. Forty-two per cent of the patients handled were white and 58 per cent colored. A new clinic was established for investigation and advice in problems of nutrition.

Dr. Edward H. Cary, President of the American Medical Association, spoke to the student body of the Medical College of Virginia on a recent visit to Richmond. He was one of the principal speakers in the dedication of the new home and library of the Richmond Academy of Medicine.

Dr. Arthur P. Little has been appointed to the professorship of prosthetic dentistry in the school of dentistry, Medical College of Virginia, Richmond. For a number of years he was engaged in important research in his field of specialization.

Faculty and Staff Meetings.

The regular scientific monthly meeting of the Faculty and Staff of the Medical College of Virginia was held on Thursday, December 15, 1932, at 8:15 P. M., in the auditorium of the Saint Philip Dormitory.

The program was as follows:

1. "Case Report of Necro-bacillosis of the Lung." Dr. W. A. Farmer.
2. "Case Report of Lateral Sinus Thrombosis." Dr. Karl S. Blackwell.
3. "The Solubility of Enamel and Its Relation to Dental Caries." Dr. J. C. Forbes.

The next regular scientific monthly meeting of the Faculty and Staff of the Medical College of Virginia will be held on Thursday, January 19, 1933, at 8:15 P. M., in the auditorium of the Saint Philip Dormitory.

The program will be as follows:

1. "Diabetes, Congestive Heart Failure, Coronary Thrombosis. A Case Report." Dr. William B. Porter.
2. "An Investigation of the Effect of a Ketogenic Diet on Normal People." Dr. F. L. Apperly.

I. A. Bigger, M. D.,
Chairman.

Dr. Bob Lewis Field,

Of the class of '31, Medical College of Virginia, who recently completed an internship at Norfolk Protestant Hospital, has located in Norfolk, Va., with offices at 38th Street and Hampton Boulevard. He will be engaged in general practice.

Dr. J. Arthur Gallant,

Richmond, Va., announces the removal of his residence and office to 201 North Boulevard, this city.

Annual Report of the Surgeon General, U. S. Navy.

This report discusses the activities of the Medical Department of the Navy during the fiscal year ending June 30, 1932, and gives the statistics dealing with the health of the Navy for the calendar year ending December 31, 1931. The vital statistics for the calendar year 1931 do not appear as favorable as for 1930, the statistics for that year reaching favorable points that have rarely been surpassed. In 1931 there was an increase in the general admission rate. This is accounted for principally by the higher prevalence of influenza and the so-called common respiratory diseases. There was a slight advance in the death rate. There was a decided increase in deaths from motor-vehicle accidents, practically all of which resulted from injuries received while on leave or liberty. Deaths from this cause exceeded those from drowning, which was slightly higher than for the preceding year.

The number of sick days per person was smaller than for any previous year since 1913, except 1917 and 1925. The rate of aviation

fatalities per 10,000 flying, was lower than in any year since aviation became an important part of the Naval activities.

There was no major disaster in the service during 1931, although several lives were lost in Nicaragua and British Honduras.

During the fiscal year, the cost to the Navy for medical care was the lowest since the beginning of the accounting system, which was established in 1924. Cost of medical care has been reduced from approximately $105 in 1929, to $92 in 1932, or a reduction of $13.00 per individual.

On June 30, 1932, the Medical Corps numbered 904 members. During the year fourteen new medical officers were commissioned, while thirty-six became separated from the service—sixteen by resignation, sixteen by retirement, three by death and one by dismissal.

Dr. Willcox Ruffin,

Class of '26, University of Virginia, Department of Medicine, after completing a four-year surgical fellowship at the Mayo Clinic, has opened offices at 708 Wainwright Bldg., Norfolk. His practice will be limited to surgery.

Dr. J. Shelton Horsley.

Richmond, Va., was elected chairman of the board of trustees of the Southern Medical Association at its meeting recently held in Birmingham.

As announced in our December number, this Association is to hold its 1933 session in Richmond, Va.

The American College of Physicians

Is to meet in Montreal, Canada, February 6-10, 1932, under the presidency of Dr. Francis M. Pottenger, of Monrovia, Calif. Headquarters will be at Windsor Hotel. The General Chairman in charge of local arrangements is Dr. Jonathan C. Meakins, of McGill University Faculty of Medicine. For further information, address Mr. E. R. Loveland, executive secretary, 133-135 South 36th Street, Philadelphia, Pa.

Dr. Hans Molitor Receives Appointment.

Geo. W. Merck, President of Merck & Co., Inc., recently announced the appointment of Dr. Hans Molitor, of the University of Vienna, to the research staff of the company. Dr. Molitor will assume the direction of research work in pharmacology. To provide adequate facilities for this research work, Merck & Co., Inc., despite the depression, is constructing at Rahway, N. J., at the present time, a research laboratory to cost in excess of $200,000, which will house a staff of twenty-five research chemists. Dr. Molitor will take over the supervision of the details of equipping and staffing the Laboratory to be devoted to research in pharmacology.

Dr. Molitor comes to this country with a background of scientific accomplishment in universities and hospitals, having studied and worked in several European countries.

Dr. D. Hunter Marrow,

Of Boydton, Va., in accordance with his custom of some years, has gone to Florida for the winter. He was accompanied by his family and will spend the winter at Daytona Beach.

Dr. F. R. Crawford,

Recently returned from Kashing, China, has located again at Farmville, Va., where he is engaged in the practice of surgery and gynecology.

The Association of American Medical Colleges,

At its annual session in Philadelphia, in November, re-elected Dr. Louis B. Wilson, Rochester, Minn., as president. Dr. Ross V. Patterson, of Jefferson Medical College, Philadelphia, was elected vice-president. The 1933 meeting will be held in Minneapolis.

Dr. Charles B. Martin,

Recently of Danville, Va., has located at Nokesville, Va., where he is engaged in general practice. Dr. Martin is a member of the class of '27, Medical College of Virginia.

Dr. J. Allison Hodges,

Richmond, Va., announces that his offices are now located at 924 West Franklin Street, this city.

Dr. Charles R. Vance,

Norfolk, Va., announces his change of address from Taylor Building to 706 Maury Place, that city.

State Five Point Representatives Come to Richmond.

Delegates from forty-three counties and seven cities in the State attended the Five Point Rally on November 25, 1932, as guests of the City of Richmond. These delegates who represented their counties and cities at the

Rally were selected from the schools havnig the highest precentage of Five Point children—those who have attained the State minimum standard of normal or corrected vision, hearing, throat, teeth, and weight.

The Woman's Auxiliary of the Richmond Academy of Medicine entertained the delegates at luncheon in the Academy building. A Roll Call gave each one an opportunity to give his name and the county represented. Other guests included Mrs. J. Allison Hodges, ex-President of the Woman's Auxiliary of the Medical Society of Virginia; Miss Ellen Smith, Chairman Program Committee; Dr. J. Allison Hodges, a former president of the Medical Society of Virginia; Dr. R. Cary Montague, City Missionary, Dr. B. B. Bagby, Director Bureau Child Health, State Department of Health, Mr. E. V. Graves, State Supervisor of Physical and Health Education, State Department of Education, and his eight assistant supervisors.

During the morning the children visited the places of interest in and around the Capitol Square. In the afternoon Dr. H. J. Eckenrode, State Historian, conducted a historical tour of Richmond for them.

This trip will be a notable event in the lives of these children, adding not only to their pride in their school and their county, but to their appreciation of health values. Knowledge of their capital city and its connection with Virginia history will be indelibly impressed on their minds.

Dr. McGill Acting for Dr. Romaine.

Dr. E. L. McGill, Petersburg, Va., was appointed to act as city health officer of that place, during the absence of Dr. Mason Romaine, who was given a two months' leave of absence. Dr. Romaine has been spending most of this time in Italy.

Stuart Circle Hospital Opens New Department.

A completely equipped physiotherapy department has been installed by the Stuart Circle Hospital, Richmond, Va. The department will be in charge of Miss Elsa M. Lange, a graduate of Walter Reed Hospital, who is a technician of physiotherapy with special experience and qualifications.

The services of this department have been offered free by the hospital to the Instructive Visiting Nurse Association and the Sheltering Arms Hospital to assist in the treatments ordered by physicians for ambulatory patients. It is felt that such treatments may assist medical and surgical cases, and the hospital offers this service as its contribution in meeting the need for medical care of those affected by the present social conditions.

Brunswick County Retains Health Unit.

The board of supervisors of Brunswick County, at its regular meeting early in December, voted unanimously to retain its health unit which is composed of Dr. T. H. Valentine, health officer, of Lawrenceville, and Miss Virginia Duling, nurse.

The Radiological Society of North America,

At its annual meeting in Atlantic City, November 28th through December 2nd, named Dr. W. Herbert McGuffin, Calgary, Alta., Canada, as president-elect. Dr. Bryon H. Jackson, of Scranton, Pa., succeeds to the presidency of the Society the first of this year. It was voted to hold the next annual meeting in Chicago, in September, 1933, as part of the International Congress on Radiology. At the meeting in Atlantic City, Dr. Leon Menville, of Tulane University, School of Medicine, New Orleans, was awarded the gold medal of the Society.

The Southern Surgical Association,

Which met at Miami, Fla., the middle of December, elected the following officers for the ensuing year: President, Dr. Vilray P. Blair, St. Louis; vice-presidents, Dr. W. Barnett Owen, Louisville, Ky., and Dr. E. H. Adkins, Miami; treasurer, Dr. Lloyd Noland, Birmingham, Ala.; and secretary, Dr. R. L. Payne (re-elected), Norfolk, Va. The council selected Hot Springs, Va., as the place for the next meeting, which will be held December 12-14, 1933.

Dr. Stuart McGuire,

Richmond, Va., attended the Bi-County Medical Society at Kingsport, Tenn., on December 7th, at which time he read a paper on the subject of "The Acute Abdomen."

Dr. C. S. Stone,

And family, for some time of Farmville, Va., are now at Raleigh Court Apartments, University Circle, University, Va., while Dr. Stone is taking special work at the University.

Dr. Clyde F. Ross,

Richmond, Va., one of the leaders several years ago in the formation of the Richmond Alumni Chapter of Sigma Chi Fraternity, has

been named president of this chapter for the ensuing year. Dr. O. B. Darden was named first vice-president.

Dr. Robert McClanahan,

Of the class of '29, University of Virginia, Department of Medicine, after completing a special service at the New York Eye and Ear Infirmary, New York City, has located in that city with offices at 780 Park Avenue.

Prize Again Offered by American Association for Study of Goiter.

The American Association for the Study of Goiter, for the fourth time, offers three hundred dollars ($300.00) as a first award, and two honorable mentions, for the best three essays based upon original research work on any phase of goiter presented at their annual meeting in Memphis, Tenn., May 15, 16 and 17, 1933. It is hoped this will stimulate valuable research work, especially in regard to the basic cause of goiter.

Competing manuscripts must be in English and submitted to the Corresponding Secretary, J. R. Yung, M. D., 670 Cherry St., Terre Haute, Ind., U. S. A., not later than April 1, 1933. Manuscripts arriving after this date will be held for the next year or returned at the author's request.

Dr. M. Cohen,

Class of '31, Medical College of Virginia, who interned at the Conemaugh Valley Memorial Hospital, Johnstown, Pa., has located in Richmond, with offices at 205 North Nineteenth Street. He will be engaged in general practice.

Dr. Richard B. Nicholls

Recently located in Norfolk, Va., with offices at 400 Wainwright Building with Dr. G. Bentley Byrd. He is specializing in obstetrics and gynecology. Dr. Nicholls graduated from Jefferson Medical College, Philadelphia, in 1930, following which he had a one year rotating interneship at Methodist Episcopal Hospital that city and a one year post-graduate residency at Philadelphia Lying-In Hospital.

Dr. Ruth S. Hart,

Of the class of '31, University of Virginia, Department of Medicine, who interned at the Tampa Municipal Hospital, Tampa, Fla., has now located at 119 Morse Boulevard, Winter Park, Fla.

Dr. John J. Hulcher,

Richmond, Va., who during the World War served as captain in command of Ambulance Company 319, 305th Sanitary Train in France, has been awarded the Order of the Purple Heart by the North Richmond Post No. 38, American Legion.

Dr. Tyler R. Boling,

Class of '31, Medical College of Virginia, who has recently been in private practice in Tazewell County, Virginia, is now at Beckley, W. Va., where he has been appointed House Physician at the Rutherford State Sanitarium.

For Sale—

No. 22 Professional Model McCaskey filing cabinet and desk combined. New and in steel gray finish. Selling at big discount to get one for special work. Address reply to "X Y. Z." care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond, Va.—(*Adv.*)

Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full-time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

Obituary Record

Dr. John Hack Ayres,

Prominent physician and business man of the Eastern Shore of Virginia, died December 8th, at his home in Accomac, Va., after an illness of several months. He was born at Pungoteague, Va., 67 years ago, and graduated in medicine from the University of Maryland in 1888. He located at Accomac shortly thereafter and had lived there continuously with the exception of the time he spent in Baltimore, taking a post-graduate course at Johns Hopkins University and attending clinics conducted by Dr. Osler. He joined the Medical Society of Virginia in 1891 and had

taken an active part in medical affairs of the State ever since. He was for a number of years a member of the State Board of Medical Examiners, having resigned less than two months ago on account of his health. Dr. Ayres was identified with many civic interests in his section of the State, and was a Mason, Knight Templar and a member of other fraternal organizations. His wife and three children survive him.

Dr. George Keesee Vanderslice,

Phoebus, Va., died December 19th, following a short illness of pneumonia. He was sixty-two years old and a graduate of the University of Virginia, Department of Medicine, in 1892. Dr. Vanderslice had been coroner of Elizabeth City County for the past thirty years, and had been a member of the Medical Society of Virginia for thirty-eight years. His wife and six children survive him.

Dr. Walter Merritt Seward,

Triplett, Va., died December 20th, at the University of Virginia Hospital, to which place he was carried for treatment, two days after Thanksgiving. Dr. Seward, who was 70 years of age, studied medicine at the University of Virginia, receiving his medical degree from that institution in 1886. For a number of years thereafter, he practiced in New York City. Retiring from practice about ten years ago, he returned to his native county—Brunswick—in Virginia, and there entered upon farming on a large scale. He was unmarried. Dr. Seward had been a member of the Medical Society of Virginia for some years and was also a fellow of the American Medical Association.

Dr. William Sydney Thayer,

Of Baltimore, internationally known authority on internal medicine, died in Washington, D. C., December 10th, following a heart attack. He was born in Milton, Mass., in 1864 and graduated in medicine from Harvard University in 1889. Dr. Thayer was professor emeritus of the Johns Hopkins School of Medicine. He was a past president of the American Medical Association, of the Association of American Physicians, the Interurban Clinical Club, the American Society of Tropical Medicine, and the American Society for Clinical Investigation.

The will of Dr. Thayer directed that his body should be given to scientific study before being cremated and buried at Concord, Mass.

Dr. Albert Anderson,

For the past nineteen years superintendent of the State Hospital at Raleigh, N. C., died October 16th, at the age of seventy-two years. He graduated in medicine from the University of Virginia, Department of Medicine, Charlottesville, in 1888. He was a past president of the North Carolina Medical Society and held many other positions of honor in the medical profession in his State.

Dr. George A. Caton,

Of New Bern, N. C., died October 17th, as the result of a fall in which his skull was fractured. He was sixty years of age and graduated from the Medical College of Virginia, Richmond, in 1898. Dr. Caton was president of the Seaboard Medical Association of Virginia and North Carolina in 1926.

Resolutions on Death of Dr. A. L. Gray.

WHEREAS, On October 13, 1932, our fellow member and former president, Dr. Alfred Leftwich Gray, passed to his eternal rest:

BE IT RESOLVED, That the Richmond Academy of Medicine feels keenly the loss of one whose integrity, excellent and impartial judgment, steadfastness of purpose and professional ability won the highest respect of his colleagues and made him a valued member of many of their most important councils. His sterling qualities were further attested by the fact that in addition to being made president of this Academy, he later became president of the Medical Society of Virginia, and as a roentgenologist of national reputation, held many important offices in the American Roentgen-Ray Society, being elected to the presidency in 1914. His long record as a preceptor in the University College of Medicine and the Medical College of Virginia, and his work as Dean of the School of Medicine of the latter institution, bear evidence that as an educator he served faithfully and well.

He gave generously of his time and labor to matters concerning the welfare of the medical profession and was always deeply concerned in acting for its better interests.

In his specialty of Roentgenology, Dr. Gray achieved and maintained a reputation well deserved. His ability and character were an inspiration to others in his specialty and he often served as a wise counselor in their various problems.

Finally, it may be said that his kindly personality and thoughtfulness for others won for him the affectionate regard of those with whom he came in contact. His genial companionship will be sadly missed by his many friends.

"His life was gentle, and the elements
So mixed in him that Nature might stand up
And say to all the world, 'This was a man.'"

BE IT FURTHER RESOLVED, That a copy of these resolutions be sent to the family of Dr Gray and be incorporated in the minutes of this Academy.

Signed: DANIEL D. TALLEY, JR.,
JOHN L. TABB, JR.,
FRED M. HODGES.